



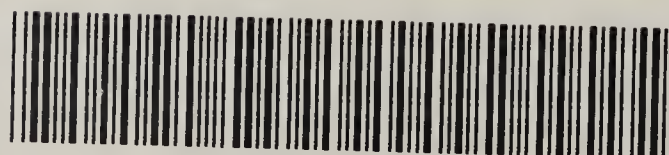
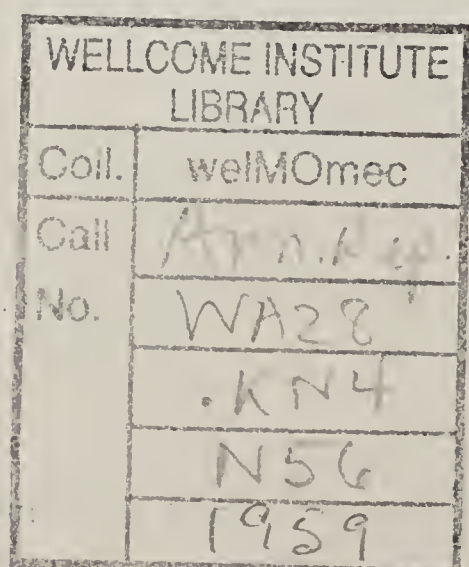
REPORT
OF THE
DEPARTMENT OF HEALTH
FOR THE YEAR ENDED
31 MARCH 1959

*Presented to the House of Representatives Pursuant to
Section 10 of the Health Act 1956*

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REPORT OF THE DIRECTOR-GENERAL OF HEALTH

The DIRECTOR-GENERAL OF HEALTH to the Hon. the MINISTER OF HEALTH, WELLINGTON.

I have the honour to lay before you the annual report of the Department for the year 1958-59.

The vital and medical statistics which appear in the report are for the calendar year 1958. On the other hand, the financial figures and, in particular, the reports of the Divisions of Hospitals and of Clinical Services are for the year ended 31 March 1959.

STATISTICAL SURVEY

The number of live births recorded and the birthrate per 1,000 of the population continue at a high level. Since 1952 the number of live births has exceeded 50,000 each year; the year 1958 is the first year in which the total has reached 60,000. The figures for 1958 are: European 53,774; Maori 6,861; total 60,635 – an increase of over 2,000 on the total for the previous year. The birthrate for 1958 is European 25·16, Maori 46·24, combined 26·53, compared with 24·82, 46·29, and 26·20 in the previous year. The combined rate of 26·53 per 1,000 for 1958 is the highest recorded in the last 10 years.

The maternal mortality rate is again remarkably low. For the last eight years the combined rate for Europeans and Maoris has been less than one per 1,000 live births. For 1958 the combined figure is 0·51, which is the same as for 1956, these two years having the lowest combined rate yet recorded. The 1958 rate for Europeans alone is 0·41 and for Maoris alone 1·31, compared with 0·40 and 1·46 respectively in 1956. The actual number of maternal deaths in 1958 was 31 (European, 22; Maori, 9). The European deaths include three under the heading of abortion induced for other than medical reasons and one under the heading of sepsis of childbirth and the puerperium.

The stillbirth rate per 1,000 births is 15·00 for Europeans and 16·20 for Maoris, giving a combined figure of 15·14. Both the European rate and the combined rate are the lowest yet recorded.

The infant mortality rate (deaths under one year of age per 1,000 live births) is 19·40 for Europeans and 54·37 for Maoris, giving a combined rate of 23·35. These figures are closely comparable with those for 1956 (European 19·39, Maori 54·36, combined 23·20), but the 1956 figures are still the lowest yet recorded. The neo-natal death rate (deaths in the first month per 1,000 live births) is 13·61 for Europeans and 22·01 for Maoris. Both the European rate and the combined rate of 14·56 are lower than for any year except 1956, which established a new record.

BOARD OF HEALTH

The new Board of Health, as constituted by the Health Act 1956, came into being in 1957, and its membership was set out in last year's annual report. Since then Sir Charles Hercus, who had been appointed to the Board as a member of the Faculty of Medicine of the University of Otago, has retired from the position of Dean of the Faculty, and his place on the Board has been taken by Dr E. G. Sayers, the present Dean. The other change in membership consists in the appointment of Dr W. Murphy, a Medical Officer of Health, in succession to Dr A. S. Wallace, who has left New Zealand.

While the former Board of Health was principally concerned with problems of water supply and drainage, the new Board, in addition to its responsibilities in relation to local authorities and their sanitary works, is given the much wider function of making "recommendations to the Minister in respect of such matters relating to public health as may be referred to it by the Minister". Another important feature of the 1956 Act is that the Board is empowered to appoint committees, which may include persons who are not members of the Board, and to delegate any of its own powers or functions to any such committee. In the light of our experience during the past two years it seems likely that much of the work of the Board will be carried out by the appointment of committees, which may be either standing committees or special committees to inquire into and report upon specific problems, and that the full Board will need to meet at intervals of approximately six months. There were two meetings of the Board last year.

The following committees were active during the year:

The Local Authorities Affairs Committee, a standing committee to which the Board has delegated most of its powers under the sections of the Act relating to local authorities, met on five occasions.

The Fluoridation Committee was established by the Board following the publication of the Report of the Commission of Inquiry into the Fluoridation of Water Supplies. One of the important functions of the committee is to make advice available to local authorities, and to this end the committee has issued a memorandum of technical advice for the guidance of local authorities and has formulated standards with which they should comply in fluoridating any water supply.

The Psychiatric Services (Public Hospitals) Committee was set up in December 1957 to report on: (i) the extent and deficiencies of the existing inpatient and outpatient psychiatric services in New Zealand public hospitals; (ii) the provision which should be made in public hospitals for the diagnosis and treatment of psychiatric illness, (a) for clinic facilities, (b) staff establishments; (iii) the need or otherwise for a type of institution intermediate between the public hospital and the mental hospital; (iv) the allocation of responsibility of Hospital Boards and the Mental Hygiene Division of the Department of Health for staffing psychiatric services in public hospitals; and (v) such other matters as appear to come within this field.

The evidence presented to the committee was considerable, and its deliberations were extensive and time consuming. At the end of the year its report had reached the stage of being almost ready for presentation to the Board.

The Outpatient Services (Public Hospitals) Committee, also set up in 1957, was given the onerous task of inquiring into, and reporting upon, the proper scope and future development of hospital outpatient services in relation to the general health services of the community. The committee held several meetings during the year 1958-59, but at the end of the year it appeared that it would be a further few months before the committee could be in a position to present its report to the Board.

The Services for the Deaf Committee has been established to inquire into and report to the Board on the general question of services to the deaf. The inquiry is to embrace such matters as hospital services, hearing-aid clinics, public health services, deafness in industry, the education and training of the deaf, supply and provision of hearing aids, and any other matter having any connection with deafness in the medical, educational, or social fields.

The Air Pollution Committee was set up last year and held its first meeting in December. It is intended that the committee should continue as a more or less permanent advisory body, and its functions may be summarised as follows: (i) to consider and advise on air pollution on a national scale; (ii) to consider and make recommendations on action necessary to check the development of an air pollution problem in this country, or, to the extent to which such problem may exist, to ensure its abatement; (iii) to determine what sampling and analytical programmes should be undertaken to establish the degree and change in the air pollution of New Zealand; (iv) to correlate and advise on air pollution research activities; (v) to receive reports from such subcommittees as may be necessary for the consideration and investigation of local air pollution matters; and (vi) to provide authoritative comment and advice on air pollution.

The Medical Examination of Young Workers Committee was established by the Board in November 1958, its task being in the main to consider the question of medical examinations of juveniles in factory and other employment in New Zealand. Only one meeting of the committee had been held before the end of the year, but from the amount of material already available for discussion and investigation it seems likely that the work of the committee will extend well into 1959 before its conclusions and recommendations can be presented to the Board.

HOSPITALS ADVISORY COUNCIL

The Hospitals Act 1957, which came into force on 1 April 1958, made provision for the establishment of a Hospitals Advisory Council of six members, three of whom are representatives of the Hospital Boards' Association. The necessary appointments were made during the year ended 31 March 1958 to enable the Council to hold its first meeting in April. The six members are, Mr W. E. Bate, President of the Hospital Boards' Association, Mr John Grierson, Chairman of the Auckland Hospital Board, Dr John Fulton, Chairman of the Otago Hospital Board, Mr D. Barker, representing the Secretary to the Treasury, Mr C. M. Wheeler, representing the Commissioner of Works, and myself as Chairman. Like the Board of Health, the Hospitals Advisory Council has as its principal function the making of recommendations to the Minister, but the scope of its activities is naturally confined to matters covered by

the Hospitals Act. It is, however, empowered to make recommendations on such general matters relating to hospitals and the hospital system as it thinks fit as well as on matters referred to it by the Minister.

The first meeting of the Council took place on 10 April 1958, and there were six meetings during the year 1958-59. The holding of meetings every second month has so far proved satisfactory, especially as a considerable amount of work falls on the Hospitals Division in the intervals between meetings, in the way of preparing reports and assembling information for consideration by the Council. At the request of the Council, Dr C. A. Taylor, Director of the Division of Hospitals, attends all meetings in an advisory capacity, as does also Mr A. E. Galletly, Senior Executive Officer of the Division, who has undertaken the additional duty of acting as secretary to the Council.

It is the declared intention of the Council to "make haste slowly", but during its first year its deliberations have ranged over a wide field including the consideration of draft regulations, advice to boards on the planning and development of building proposals, the provision of "open" maternity beds throughout New Zealand, the distribution and coverage of specialist services, patients' library services, and the general policy of representation on hospital boards and consideration of individual cases of representation following the review which has been made in respect of every board under the provisions of the new Act.

I am already confident that the role of the Hospitals Advisory Council will be an increasingly important one as the years go by.

HOSPITAL WORKS COMMITTEE

With the coming into force of the new Hospitals Act on 1 April 1958, the Hospital Works Committee, which had been established some four years before as an inter-departmental committee, became a statutory body. Its functions, as specified by the Act, are to make recommendations both to the Minister and to the Loans Board in respect of the major building projects of hospital boards. I have already stated that I regard the setting up of the Hospital Works Committee as one of the most important events in the hospital affairs of the country during the last several years, and it is a source of great satisfaction that Mr Barker (representing the Secretary to the Treasury) and Mr Wheeler (representing the Commissioner of Works), who have been my colleagues on the committee since it began, have continued as the representatives of their respective Departments.

It is the practice of the committee to examine every major hospital building project at successive stages, from the point at which it makes its first appearance as a proposal submitted by a Hospital Board up to its final appearance as an application for Ministerial approval to accept a tender. During the years in which the committee has been in existence I have personally visited every hospital where building is in progress or being planned, and a large proportion of such institutions have also been visited by Mr Barker and Mr Wheeler.

During its earlier years the committee found its time largely occupied by endeavours to achieve progress with building that was urgently needed. The desirability of having a properly drawn up building programme on a national basis has been recognised from the beginning,

but, though the committee has consistently aimed at orderly progress and a careful evaluation of priorities, the need to get ahead with providing hospital beds and services prevented any serious attempt at drawing up a national programme until last year.

In the early part of last year, however, the Hospitals Division obtained from hospital boards full details of their building progress and their estimates of building expenditure for three successive years. This information was carefully collated by the Division and (through the courtesy of Mr Wheeler) critically examined by officers of the Ministry of Works, with the result that the committee in due course found itself in a position to approve and recommend to the Minister a hospital works programme projected for three years and involving an expected expenditure of £4·5 million of loan money for the year 1958–59. The committee is indebted to officers of the Hospitals Division and of the Ministry of Works for their valued contribution, and intends from now on to produce a similar programme – reviewed and brought up to date – as early as possible in each financial year.

There were 24 meetings of the committee during the year. Further reference to its activities will be found in the Report of the Director of the Division of Hospitals.

NEW ZEALAND REPRESENTATION ABROAD

New Zealand was represented at the Eleventh General Assembly of the World Health Organisation held in Minneapolis during May 1958 by Dr H. B. Turbott, Deputy Director-General of Health, as chief delegate and Miss H. N. Hampton, First Secretary, High Commissioner's Office, London, as alternate. Dr Turbott also represented New Zealand at the Ninth Meeting of the Western Pacific Regional Committee of the World Health Organisation held in Manila in September 1958.

Dr Turbott, together with Miss F. J. Cameron, Director of the Division of Nursing, represented New Zealand at the annual meeting of the South Pacific Board of Health at Honiara during June 1958. Miss Cameron represented New Zealand at the meeting of the Florence Nightingale Education Committee of the National Council of Nurses in London during March 1959.

Dr J. B. Bibby, Director of the Division of Dental Hygiene, and Dr G. H. Leslie, Assistant Director of the Division of Dental Hygiene, represented New Zealand at the World Health Organisation Seminar on Dental Health at Adelaide in January 1959.

Dr A. D. Warren, Medical Officer of Health, New Plymouth, and Miss B. J. E. Hough, Nurse Inspector of Hospitals, represented New Zealand at the World Health Organisation Regional Conference on Maternity Care at Manila during March 1959.

Mr J. F. McCahon, Senior Physicist, Dominion X-ray and Radium Laboratory, Christchurch, attended the "Symposium on the Peaceful Uses of Atomic Energy in Australia" held in Sydney in June 1958.

Dr D. P. Kennedy, Assistant Director of the Division of Public Hygiene, represented the Department as a member of the New Zealand delegation to the International Labour Organisation Conference in Geneva in June–July 1958.

ACKNOWLEDGMENTS

The Department is again indebted to the various organisations with which it is associated for the cooperation it has received during the year.

I wish particularly to express my personal thanks to the members of the Hospitals Advisory Council and to my two colleagues on the Hospital Works Committee, as well as to the members of the various advisory and grading committees in connection with hospital salaries. It is a pleasure also to record my warm appreciation of the unfailing support and cooperation of Dr Turbott, Deputy Director-General of Health, Mr Hunn, Deputy Director-General (Administrative), the Directors of all Divisions, and other senior officers of the Department.

JOHN CAIRNEY,
Director-General of Health.

REPORT OF THE DEPUTY DIRECTOR-GENERAL (ADMINISTRATIVE)

Last year comment was made on the substantial share of the national revenues required to maintain the community's established health and social services and benefits. As could be expected, rising costs and increased services are reflected in increased expenditure again this year, but the increase of £2½ million is less than that recorded in the immediate past years.

There is the inclination to view expenditure as a rising total, but it must be borne in mind that increasing population plays a major part. If total expenditure is expressed as an amount of some £18 per head of population this is not excessive when account is taken of the very substantial range of services given to the public—free hospital, free medicine, medical and nursing services, polio vaccination, school dental services, and many of a like kind. Certainly expenditure was much less 10 years ago, but services have expanded considerably since then, whilst the portion spent on general administration has remained a small fraction of the total expenditure.

The distribution of the 1958–59 expenditure under main headings is shown in a diagram on page 16. From an examination of the following table of net expenditure it will be seen that the main increase for the year has been in social security—medical, etc., benefits, while the remaining increase of £800,000 is spread fairly proportionately among other items.

The figures do not include capital expenditure from Public Works Account nor, in respect of hospital boards, loans for major capital construction raised by the boards themselves.

Table 1

	1957–58	1958–59	Increase
Vote "Health"—	£	£	£
General health services	1,305,119	1,404,342	99,223
Dental hygiene	845,541	945,483	99,942
Departmental hospitals and institutions (other than mental hygiene) ..	497,362	519,466	22,104
Mental hygiene	3,270,270	3,479,621	209,351
Health education	27,539	28,655	1,116
Medical Research Council	104,039	104,872	833
Homes for the aged	296,849	209,539	— 87,310
Pensioners housing: Local authorities ..	124,948	176,019	51,071
Youth hostels	3,377	12,219	8,842
Plunket Society subsidies	121,777	120,956	— 821
Miscellaneous grants and subsidies ..	41,738	90,520	48,782
Bursaries	43,703	42,594	— 1,109
Totals	6,682,262	7,134,286	452,024
Vote "Public Hospitals"—			
Grants to hospital boards	15,390,252	15,774,324	384,072
Social Security Fund—			
Vote "Medical, Hospital, etc., Benefits" (includes assessed salaries)	17,225,712	18,840,601	1,614,889
Grand Totals	£39,298,226	£41,749,211	£2,450,985

Of the £2½ million increase in expenditure, 15·7 per cent related to vote "Public Hospitals"; 65·9 per cent to vote "Medical Hospital, etc.,

Benefits" and 18·4 per cent to vote "Health". The major contributing factors to these increases were:

Vote "Health"

Salaries and Wages—The increase of £212,175 is accounted for partly by an increase of 168 in the total staff and partly by the cost of the general salary increase from 1 October 1958. Staff increases related mainly to dental and student dental nurses (77) and mental hygiene staff (75). The staffing of mental hospitals has continued to improve.

Poliomyelitis Vaccination—The increase of £80,655 results from greater purchases of vaccine used in the increased tempo of the campaign for vaccination of children and other persons at risk.

Mental Hygiene—Salaries and wages accounted for nearly half of the increase of £209,351. The balance relates mainly to increases in the following items—

- (a) Rations (£45,558). Rises in meat costs; increase of ration scale particularly on eggs; greater patient population.
- (b) Fuel, light, and power (£25,427) contributed to by increased costs for electricity and coal.
- (c) Uniforms (£15,315). Patterns for uniforms were changed and two years stock obtained.
- (d) Drugs and instruments (£10,205). New drugs brought into use.
- (e) Subsidies to Intellectually Handicapped Children's Association (£10,827). Greater assistance by way of capital grants.

Loans, Subsidies, and Grants—Though there was a decrease of £87,310 in the payments to religious and welfare organisations to provide accommodation for old people the amount paid to local authorities by way of subsidy for the erection of cottages and flats for old people increased by £51,071. This was the first year that a £1-for-£1 subsidy was paid on the net proceeds of sales of "Health" stamps, this accounting for an increase of £36,657.

Dental Stores and Equipment—The increase of £46,414 was largely due to the opening of 44 new clinics. The greater number of student nurses recruited into the three training schools over the past few years is now being reflected in more trained dental nurses in the field.

Vote "Medical, Hospital, etc., Benefits"

The sums provided under this vote (exclusive of assessed salaries) increased substantially by £1,597,068 to £18,655,375—an increase of approximately 9·2 per cent compared with 1·7 per cent and 8 per cent in the two preceding years. Details of the increases are as follows:

			£
Maternity benefits	..	..	93,134
Medical benefits	..	..	41,754
Hospital benefits	..	..	844,095
Pharmaceutical benefits	..	..	645,802
Supplementary benefits	..	..	27,717*
			<hr/>
			£1,597,068
			<hr/>

*Decrease.

The relative costs since 1954–55 are shown in a graph on page 15. The hospital and pharmaceutical benefits account for the bulk of the increase. In the previous year subsidies totalling £117,782 were paid to

private hospitals in addition to the scale rate for hospital benefits but these were replaced from 1 April 1958 by increased rates which also applied to public hospitals. The cessation of the subsidies and the payment of the increased rates of 20s. 6d. and 25s. per day (previously 18s. and 21s. per day) accounted for the increase of £844,095 in hospital benefits.

The increase of £645,802 in the cost of pharmaceutical benefits compares unfavourably with the decrease of £106,016 last year. The reasons for the increase and the steps being taken to halt the rising cost of free medicines are dealt with in detail in the report of the Director of the Division of Clinical Services. The following table shows the growth in these benefits since 1943:

Table 2—Pharmaceutical Benefits

Year Ended 31 March—	Expenditure	Mean Population	Number of Prescriptions	Average Cost per Prescription	Number of Prescriptions per Head	Cost of Prescriptions per Head of Population
	£			s. d.		£ s. d.
1943 ..	563,247	1,640,191	3,500,000	3 3	2.1	0 6 10
1944 ..	762,198	1,637,570	4,250,000	3 7	2.6	0 9 4
1945 .	980,237	1,664,585	4,900,000	4 0	3.0	0 11 10
1946 ..	1,133,366	1,710,680	5,400,000	4 2½	3.2	0 13 3
1947 ..	1,439,686	1,770,291	6,100,000	4 8½	3.4	0 16 3
1948 ..	1,558,350	1,807,611	6,300,000	4 11½	3.5	0 17 3
1949 ..	1,793,159	1,843,767	6,500,000	5 6	3.5	0 19 5
1950 ..	2,043,843	1,881,317	7,240,000	5 7½	3.8	1 1 9
1951 ..	2,097,000	1,917,934	7,300,000	5 9	3.8	1 1 11
1952 ..	2,428,216	1,958,729	7,850,000	6 2¼	4.0	1 4 10
1953 ..	3,015,833	2,009,506	9,146,000	6 7	4.5	1 10 0
1954 ..	2,919,620	2,061,376	9,763,000	5 11¾	4.7	1 8 3
1955 ..	3,047,331	2,105,766	10,299,561	5 11	4.9	1 8 11
1956 ..	4,039,145	2,150,290	11,251,100	7 2	5.3	1 17 8
1957 ..	4,572,557	2,206,226	12,562,000	7 3½	5.7	2 1 11
1958 ..	4,466,541	2,246,093	12,204,000	7 3¾	5.5	2 0 0
1959 ..	5,112,343	2,285,852*	12,847,773	7 11½	5.6	2 4 11

*As at 31 December 1958.

BURSARIES

The following table shows details of bursaries (1957 figures in parentheses). The total and distribution of new awards were much the same as in the previous year.

Table 3—Bursaries

—	New Awards 1958	Renewals 1958	Total	Amount Paid
				£ £
Dental	9 (10)	39 (55)	48 (65)	8,186 (11,448)
Dietetic	13 (6)	5 (7)	18 (13)	2,514 (2,071)
Post-graduate nursing ..	11 (7)	.. (..)	11 (7)	4,464 (3,464)
Medical	17 (19)	30 (25)	47 (44)	7,441 (7,104)
Nursing (infant welfare training)	47 (55)	.. (..)	47 (55)	5,239 (6,204)
Nursing (midwifery) ..	3 (2)	.. (..)	3 (2)	90 (60)
Physiotherapy	48 (46)	68 (56)	116 (102)	14,660 (13,352)
Totals	148 (145)	142 (143)	290 (288)	42,594 (43,703)

PLUNKET SOCIETY

The total of £204,935 paid to the Plunket Society was £28,245 more than the previous year, this being largely accounted for by a special grant of £23,000 from the Social Security Fund by way of special assistance towards the operating expenses of Karitane Hospitals.

Payments made in the past two years are summarised as follows:

Table 4

	1957-58	1958-59
From Vote "Health"—	£	£
Nurses' salaries	96,684	97,674
Nurses' car milage	12,160	12,350
Salaries of professional, clerical staff, and travelling expenses ..	6,554	6,639
Contributions in respect of new motor cars	2,055	1,293
Contribution to Dominion Training Centre	3,000	3,000
Karitane hospitals: Subsidy on new capital works	1,324	..
Totals	121,777	120,956
From Social Security Fund—		
Hospital benefits	43,400	45,451
£2 for £3 subsidy in respect of donations to hospitals	11,513	15,528
Special grant .. .. .	..	23,000
Totals	54,913	83,979
Grand totals	£176,690	£204,935

GENERAL

As the Department continues to grow and its services expand more administrative problems arise and there is a constant need to review the administrative procedures. Notwithstanding difficulties in staffing and accommodation much progress has been made in the past year and the foundation laid for major improvements in the future. A Department with a staff of close on 6,000 and an expenditure of over £42 million is in every sense "big business", and when account is taken of its complexities and diverse activities there must be few private enterprises that have a bigger task in management. Comments on items of note follow—

Staffing

Poor recruitment of career administrative staff over many years when work has continued to grow is now reflected in difficulty in filling some of the supervisory posts. Though more young men have joined in the past two or three years the numbers are still inadequate, and such as there are are as yet too young to take over responsibility for other staff. The filling of posts at the first level of supervision is the cause of considerable concern, and as time goes on this can be expected to project into the higher levels. The large total staff and the many comings and goings lead to an inordinate amount of staff work. Senior executives find that more and more time must be spent on problems of staffing with less time to devote to the administrative tasks which should be their primary concern.

Accommodation

It is gratifying to see some improvement in office accommodation. For too long we have had to manage in substandard and overcrowded offices with fragmentation into several buildings in many centres. The Auckland office has recently moved into the new Government buildings, and there seems every prospect that the Wellington District Office will, before long, move into far better space than the present "Hotel Cecil" building.

Moves are afoot for better offices in Christchurch and New Plymouth. The growth of the Head Office created a pressing demand for more space and this is now being met by the building of a penthouse on the State Fire Building. A new district office is in the process of establishment in Napier and a further health district is to be established, based on Takapuna where offices in a new building are in sight. Leading from the establishment of these two districts a complete review of the boundaries of all health districts is to be made. The National Health Institute is being developed and possession has now been taken of all space in the "Newtown Library" building where extensive alterations are to be made for expansion of the laboratories, etc. Improvements in the housing of public health nurses are being made; new cottages being built, suitable houses purchased and existing departmental houses renovated and improved.

Office Methods and Procedures

Last year mention was made of the appointment of an officer for organisation and methods. This officer is now reviewing methods, undertaking procedural researches and advising branches on methods of work simplification. A manuals officer has also been appointed, whilst another has been diverted to prepare a comprehensive manual on stores. As manuals on various facets of work are prepared methods are carefully reviewed and the accumulation of instructions on many types of work will undoubtedly lead to greater efficiency. Suggestions from the staff are freely invited and some 150 were received during the year. Soon a concentrated suggestions campaign will be held among the mental hospitals and other departmental institutions.

Delegation of authority to branch offices is being increased. Authority to incur expenditure on urgent day-to-day work is being increased, and this will improve efficiency by relieving top executives of routine work and by reducing the quantity of paper work.

The punched card machines in the Medical Statistics Branch are to be replaced by more up-to-date and versatile equipment. In line with modern developments in the use of data processing equipment, the use of the plant will be extended to other purposes, in particular, mechanical accounting.

Civil Defence

The Department will have important responsibilities under the proposed national civil defence plan and there have been preliminary discussions with the Ministry of Civil Defence. Action already taken to prepare for the coordination of hospital and public health services in the event of emergency arising from natural causes, has provided a useful basis on which to work.

St. Helens Hospitals

The Department administers a St. Helens Maternity Hospital in Auckland, Wellington, and Christchurch. As well as assisting to meet the pressing need for increased maternity accommodation, these hospitals are the only training schools in New Zealand for the midwives required for our public hospital maternity wards and institutions, private maternity hospitals and field health services.

Unfortunately, for a variety of reasons, the development of these hospitals has lagged behind public hospital development, with the consequence that they are well below modern hospital standards. As part of a programme to bring the St. Helens Hospitals up to present-day standards and keep pace with future development, a Departmental Committee of Management was set up in Head Office last year to exercise a coordinating control over the three hospitals in much the same manner as a hospital board controls the various institutions within its district. The Department has now, with Cabinet approval, embarked on an extensive St. Helens Hospitals building programme over the next 4–5 years in each of the three centres totalling some £1,250,000. This involves the complete replacement of the St. Helens Hospital in Auckland with a new 60-bed hospital, a new 60-bed block in Wellington, and the expansion of the St. Helens Hospital in Christchurch from 60 to 108 beds.

Consultative Committee on Infant and Pre-School Health Services

Early in March 1959 Government approved of a consultative committee to inquire into and report on infant and pre-school health services. The members of the committee are Sir George Finlay of Auckland (Chairman), Mrs M. Dowse and Dr J. M. Watt of Lower Hutt, and Mr Malcolm J. Mason of Wellington. Before this annual report is published the committee will have commenced its hearing with an order of reference including

Existing services as compared with overseas;

The functions and responsibility of the Government, the Plunket Society, hospital boards, and other agencies, in providing such services to the maximum efficiency with proper economy;

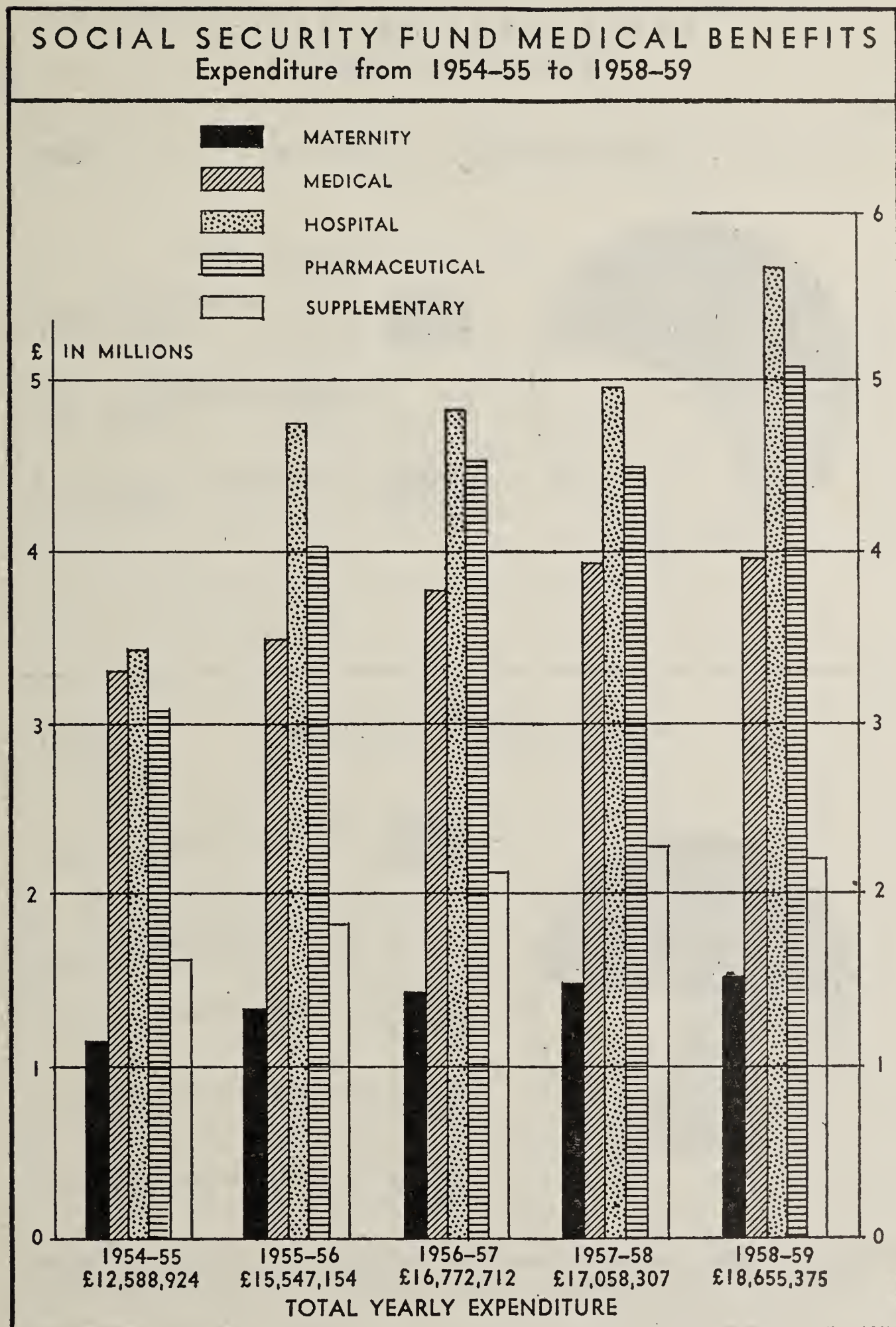
The role of the Karitane hospitals;

The definition of the financial responsibilities which should exist between the Government and voluntary organisations.

It is hoped that this committee will bring down recommendations that will further the cooperation between Government and voluntary agencies in working together for the common good in this fundamental field of public health.

I express my sincere thanks to staff at all levels for their willing and efficient work during the year – and particularly to Mr A. E. Galletly and Mr W. L. Turley who deputised for me whilst I was overseas.

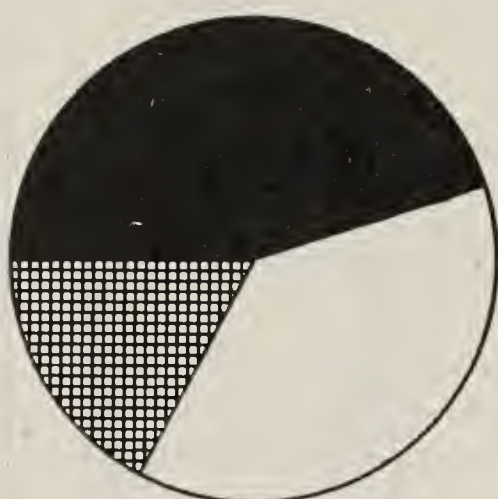
D. A. HUNN,
Deputy Director-General (Administrative).



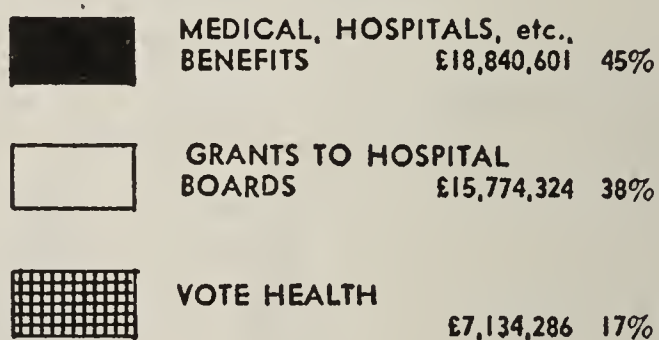
DEPARTMENT OF HEALTH

Net Expenditure 1958-1959

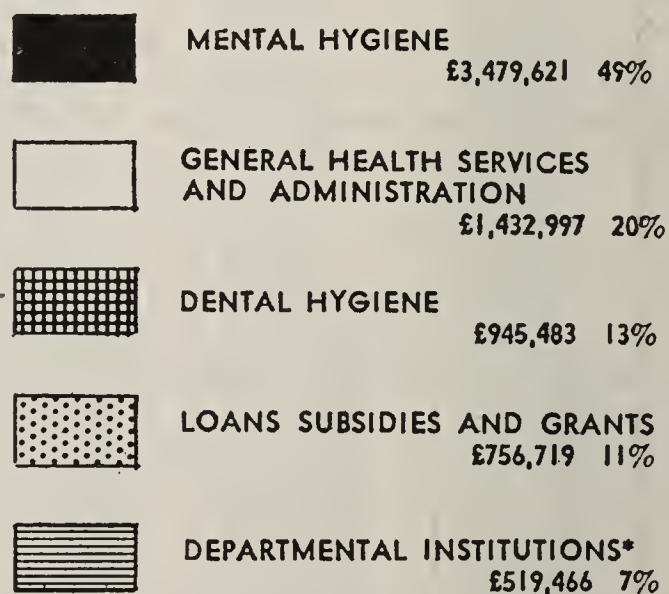
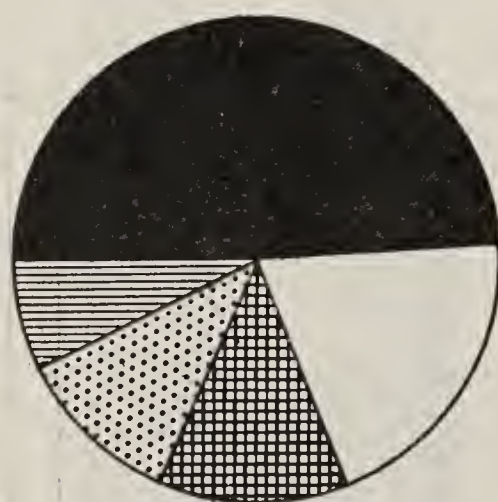
TOTAL EXPENDITURE £41,749,211 100%



SOCIAL SECURITY



VOTE - HEALTH £7,134,286 100%



*These institutions include: Queen Mary Hospital, Hanmer, Queen Elizabeth Hospital, Rotorua, St. Helens Hospitals, Auckland, Wellington, Christchurch.

REPORT OF THE DIRECTOR, DIVISION OF PUBLIC HYGIENE

This report on public hygiene includes the report of the Assistant Director of the Division, Dr D. P. Kennedy, who administers Occupational Hygiene, Poisons and Dangerous Drugs, and Air Pollution.

INFECTIOUS DISEASES

Poliomyelitis

There were 57 cases of poliomyelitis reported during the year, compared with 63 in 1957; 897 in 1956; 703 in 1955; and 43 in 1954. As the reduced incidence was to be expected the vaccination campaign cannot be claimed as solely responsible. An analysis of the cases according to age groups, compared with similar years before vaccination is, however, very enlightening and very encouraging, as it shows a quite remarkable reduction in cases occurring in the protected age groups 5-10 years and 10-15 years – over 80 per cent of the children in these two age groups have now been protected by vaccination.

The analysis of cases according to age groups referred to above is given in the following table:

Table 5—Poliomyelitis in New Zealand—by Age and Sex Groups, 1951–1958

	Under 1 Year		1–5		5–10		10–15		15–25		25–45		45–65		65 +		Totals		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Totals
1951	..	..	3	2	8	2	5	..	..	1	1	5	..	..	..	..	17	10	27
1952	17	14	94	58	123	73	71	60	67	103	88	94	15	10	2	1	477	413	890
1953	1	3	27	15	55	23	52	29	45	52	53	38	3	7	..	..	236	137	403
1954	1	..	1	4	8	5	7	3	3	1	4	6	..	..	..	..	24	19	43
1955	8	6	71	58	88	67	46	29	50	84	93	92	7	4	..	..	263	340	703
1956	5	4	82	49	118	73	86	45	98	92	112	118	8	7	..	..	509	388	897
1957	1	..	4	2	16	5	4	7	9	5	5	2	8	..	..	..	36	27	63
1958	6	2	9	1	6	1	4	..	4	8	7	6	1	1	..	1	37	20	57

If in the above table, the year 1954 – the nearest year with a similar number of cases and before vaccination commenced – is compared with 1958 it will be noted that more cases have occurred in 1958 in all groups except in the protected age groups, that is 5–10 years and 10–15 years. In the unprotected age groups there were 20 cases in 1954 and 46 in 1958. In the protected age groups, however, there has been quite an appreciable reduction, 11 cases in 1958 compared with 23 cases in 1954. Seeing that there is a total increase in the number of cases for 1958 we would expect an increase to at least 30 cases in these two age groups and moreover, if the increase in these two groups had been the same as in the non-protected age groups, we would expect that in 1958 there would have been 53 cases in the 5–15 years age groups. This means that we would have expected five times as many cases as actually occurred.

Since 20 per cent or one-fifth of the children in these age groups remain unvaccinated, the 11 cases that did occur would have been accounted for by the attack on these unvaccinated children to the same degree as all other non-protected children, which virtually means that the vaccination was 100 per cent effective in preventing poliomyelitis.

Analysed in this way the figures for the year present a very encouraging picture and confirm the findings already noted in other parts of the world, that poliomyelitis vaccination with Salk vaccine is a very effective measure against paralytic poliomyelitis. At the same time, these findings sound a very definite note of warning to those who have not availed themselves of this protection for their children.

In the case of diphtheria immunisation, a 70 per cent protection of the community is considered sufficient to prevent the spread of the disease and the remaining 30 per cent of non-protected children reap the reward provided by the 70 per cent of protected children – the protection of the non-immunised children is of course not complete as if they did happen to get the disease they may get it in a very severe and sometimes fatal form, whereas the immunised children seldom get the disease and if they do, very rarely get it in severe form, and death from diphtheria in immunised children is almost unknown.

Poliomyelitis vaccination does not, unfortunately, protect in this way. It does not prevent infection so can be expected to have little if any effect on the actual spread of the disease. What it does do is to prevent paralysis. No matter how great is the percentage of the community protected by poliomyelitis vaccination, while it does not increase the danger it does not in any way confer any benefit on those not vaccinated. Parents would be wise to heed the warning that the results this year have so strikingly emphasised. Poliomyelitis is just as likely to strike the community now as it ever was, but it will strike only those who are not protected.

For the sake of clarity I have omitted above to state that of the 11 cases occurring in the 5–15 years age groups, two of these occurred in children who had been partially immunised. They had received two but not the third injection. This does not however affect the general position or vitiate the conclusions which have been drawn. I have also omitted to take into account the varying sizes of the populations in the two years which have been compared, but as the population at risk is undoubtedly greater in 1958 than in 1954, this would tend to strengthen the conclusions drawn. I have also not made mention of the variation in the attack rates in the various age groups, but have taken these to apply equally in both the years compared.

Poliomyelitis Vaccination

Very satisfactory progress was made during 1958 in the vaccination campaign against poliomyelitis and table 6 sets out the vaccinations which have been performed. The cooperation of the press and broadcasting authorities in giving free publicity to the Department for this campaign is greatly appreciated.

By the end of the year over 80 per cent of school children from 5–16 years have received two injections. Some children will not receive booster doses until the following year. During the year, vaccination for pregnant women and other special groups was continued and approval was given for the vaccination of pre-school children aged 2–4 years. Commencement has been made during the year on the vaccination of this group.

The vaccination programme has imposed a heavy strain on all districts and Medical Officers of Health have mentioned the long hours and extra burden that this has meant for many members of their field staff. The response from parents in regard to school children has compensated for this and made it a worth-while effort. It is regretted that we have to report that the response for the pre-school children and the 17-21 years age group has been most disappointing. It is to be hoped that the great advantage provided by vaccination, so clearly indicated in this year's statistics, will stimulate parents to get their pre-school children done and will also induce young people between the ages of 17-21 years to come forward in better numbers.

Table 6—Annual Return of Poliomyelitis Vaccinations for Year Ended 31 December 1958

Districts	Children			Adults			Total		
	First	Second	Third	First	Second	Third	First	Second	Third
Whangarei ..	13,565	12,243	12,450	2,132	2,090	805	15,697	14,333	13,255
Auckland ..	60,964	59,822	39,457	29,582	28,114	2,059	90,546	87,936	41,516
Hamilton ..	38,505	36,014	24,717	4,446	4,119	724	42,951	40,133	25,441
Rotorua ..	23,227	22,456	14,396	1,288	1,041	1,011	24,515	23,497	15,407
Gisborne ..	22,050	21,699	12,361	1,711	1,617	1,291	23,761	23,316	13,652
New Plymouth ..	16,231	15,533	10,727	1,534	1,430	1,231	17,765	16,963	11,958
Palmerston North	28,569	26,852	16,656	1,499	1,547	778	30,068	28,399	17,434
Wellington ..	45,588	39,700	36,099	8,500	5,842	753	54,088	45,542	36,852
Nelson ..	10,961	9,930	11,083	3,202	3,206	1,091	14,163	13,136	12,174
Greymouth ..	6,518	6,324	6,805	430	366	479	6,948	6,690	7,284
Christchurch ..	32,011	31,429	28,418	2,142	1,777	938	34,153	33,206	29,356
Timaru ..	16,003	15,497	12,262	3,407	1,275	1,214	19,410	16,772	13,476
Dunedin ..	19,335	18,705	13,056	9,689	9,147	1,454	29,024	27,852	14,510
Invercargill ..	13,604	13,471	8,909	683	652	630	14,287	14,123	9,539
Totals ..	347,131	329,675	247,396	70,245	62,223	14,458	417,376	391,898	261,854

Total number of injections given: 1,071,128

Influenza

As was expected the influenza pandemic in 1957 has been followed in most parts of the world by secondary epidemic waves of this disease. New Zealand has been no exception. Towards the end of the year (in November and December) influenza was very prevalent in several parts of the North Island. In Auckland, the Scouts Jamboree was badly affected and many cases occurred in the scouts congregated from all parts of the world. The disease has been very similar to that experienced in 1957, but if anything, has been milder with fewer deaths though relapses seemed to be more common. During the year there were 38 deaths reported due to influenza, compared with 181 in 1957; 89 in 1956; 28 in 1955 and 80 in 1954. The pneumonia death rate was also back to normal.

Diphtheria

The number of cases, 16, is the lowest on record. This is most gratifying and is no doubt very largely due to the highly immunised state of the community against the disease.

Infective Hepatitis

During the year 1,893 cases, an increase of 450 cases over 1957, were reported. There were 22 deaths. This disease continues to gain ground and is becoming one of our most serious public health problems. During the year one quite extensive outbreak was traced to the infection of a water supply, and surveys carried out in several districts indicate that the disease is spread by poor personal hygiene, especially among school children. Infected water supplies and poor personal hygiene – especially in school children – probably accounted for most cases.

Control as with the case of poliomyelitis is impracticable on account of the large numbers of unrecognised cases and because the disease is transmitted more readily in the early stages before the onset of jaundice clarifies the diagnosis and also because of the number of cases that remain as carriers for years afterwards. The disease is a most sensitive index of personal hygiene and community sanitation and the present position in regard to this disease calls for an all out effort to improve hygiene in schools and for attention to public water supplies and the proper disposal of sewage.

Enteric Fevers

Forty-four cases were notified during the year, one less than 1957. The majority of cases occurred in the Auckland province.

In September the m.v. *Sibajak*, carrying mostly Dutch immigrants, arrived in Wellington with seven undiagnosed cases of febrile illness aboard and a history of a number of other passengers being similarly affected during the voyage. These seven cases were admitted by the port health officer to hospital and were found a few days later to be suffering – three from typhoid and four from paratyphoid B. By this time the several hundred passengers from the ship had been disembarked to all parts of New Zealand. Medical Officers of Health were notified and all passengers were examined. Another 11 cases convalescent from paratyphoid B were discovered and these were isolated in hospitals until clear of infection. No secondary cases as far as we know have occurred as a result of this incident and it has clearly demonstrated the value of a careful watch of entrants into this country by port health officers. The port health officer and the medical officer of health who handled the follow-up work so expeditiously are to be congratulated on a nice piece of work. If all these cases had not been isolated it is almost certain that we would have had some secondary cases and perhaps the establishment of a germ which, up to now, we have been fortunate in having very little experience with. It has been reported but rarely.

Bacillary Dysentery

A total of 438 cases were reported as against 165 the previous year. The increased incidence was accounted for by outbreaks which occurred in the Wellington, Rotorua, and Gisborne districts. This disease is one of the most infectious diseases we have to deal with and like infective hepatitis is an index of the sanitation of the country. The number of cases that occurred last year cannot be regarded with complacency and certainly calls for a stocktaking of the general sanitation of the country.

Staphylococcal Pneumonia and Staphylococcal Septicaemia

As from 1 April 1958 staphylococcal pneumonia and staphylococcal septicaemia of the new born infant were declared notifiable diseases.

Erysipelas

During the year erysipelas was removed from the schedule of notifiable diseases.

NOTIFIABLE DISEASES

Hydatids

Sixty-one cases of hydatids were notified during the year, an increase of five over the figures for 1957. The health education campaign carried out by this Department in conjunction with the Department of Agriculture in an endeavour to educate the public in regard to the dangers of this disease has again been well supported by farmers' groups and local bodies, who along with many private individuals, have vigorously campaigned against this disease. There is no doubt that a determined effort is at last being made to rid the country of this menace, and the local bodies, farmers' organisations, etc., are to be congratulated on the enthusiasm with which they are endeavouring to stamp out this disease. It will unfortunately be some time before the fruits of this, as far as humans are concerned, will be in evidence, as the disease takes a long time to develop. But we can be assured that if all owners of dogs would dose their dogs regularly with arecoline hydrobromide and prevent their feeding on raw offal, this disease would be eradicated.

Food Poisoning

The reported cases this year numbered 288, which is an increase of 96 on the previous year. Many medical officers of health throughout the country reported that the notification of food poisoning cases by private medical practitioners is far from satisfactory and several outbreaks which have called for remedial action by this Department have been brought to our notice either by proprietors of food establishments or by patients themselves. Frequently, this is too late for proper investigation to be carried out and early notification in these cases is essential. Food poisoning is a measure of the efficiency of general food handling and the investigation of outbreaks frequently gives an opportunity to the Department to correct serious faults in this direction. One fault that has again been emphasised this year is the practice of allowing meat or poultry to cool in the liquor in which it is boiled. It is realised that this is a practice which is favoured by culinary experts, but it has now been shown quite clearly that it is a very dangerous practice and over and over again outbreaks of food poisoning have been traced to this procedure. Particulars of some of the outbreaks which have occurred during the year are as follows:

- (a) In a home for the aged some 30 staff and inmates were affected by food poisoning. Unfortunately the remains of all the food, apart from the corned beef, had been discarded. It was therefore difficult to track down the cause to any one food. The first cook had been suffering from boils but they had cleared up before this outbreak occurred. The outbreak nevertheless bore the hallmark of staphylococcal food poisoning.

- (b) An outbreak of food poisoning involving 11 cases as notified following a fatal case. This outbreak was an unusual example of a double infection of food with *Salmonella typhi-murium* and coagulase-positive staphylococcus, so clearly demonstrated on both clinical and bacteriological grounds.

Eleven persons consumed the affected food, a home-made brawn, and all eleven developed typical symptoms of diarrhoea and vomiting. From the faeces of all patients *Salmonella typhi-murium* was isolated, but the unusual pattern of the incubation periods did not appear to correspond with a true salmonella infection. In six cases the lapse of time between partaking of the brawn and the onset of symptoms was between 20 to 30 hours and typical of salmonella infection, the interval in another case of seven hours was within reasonable limits, but the interval of less than four hours in the remaining four cases seemed a clear indication that preformed toxin was present. The National Health Institute report on bacteriological examination of a specimen of the brawn itself clarified the picture by demonstrating the presence of both *S. typhi-murium* and a coagulase-positive staphylococcus of a phage type known to be an enterotoxin producing strain.

- (c) Forty-five out of 85 men who had eaten the midday meal at a wharf canteen on the Tuesday after Easter suffered from bouts of diarrhoea and vomiting during the evening. A large roast of beef purchased by the catering contractor on the previous Thursday and kept in a refrigerator was partly cooked on the Monday evening and again on the Tuesday.

Approximately half of the diners managed to eat the meat whilst the rest left most of it on their plates.

It was noted that the meat was very underdone.

The outbreak appears to have been caused by improperly cooked roast beef infected with salmonella organisms.

- (d) A party ordered boxed chicken lunches. Some 10–12 hours after the lunches had been consumed various members of the party were ill with stomach pains and diarrhoea. It seemed likely that the lunches were responsible as they had the ingredients and were the common diet of the group. The general picture appeared at first examination to be a salmonella infection. A spare lunch was sent to the hospital laboratory for examination and arrangements were made for faecal specimens to be examined from all the food handlers concerned. The responsible organism proved to be *Cl. welchii*. The responsible medium was most likely chicken which had been boiled and then left to cool in the liquor it was boiled in. The incident illustrates the danger attached to this practice which has been noticed through the years to have been responsible for quite a number of food poisoning outbreaks.

ENVIRONMENTAL SANITATION

Sewerage

The Health Act 1920 placed on local authorities the responsibility for the promotion of public health within their districts, and this principle has governed public health practice throughout New Zealand ever since.

Many local authorities accept this responsibility in the true spirit and are to be congratulated on the health services provided, as well as the more popular amenities which, though not so necessary from a health point of view, certainly do make for better health.

In my last annual report I commented very unfavourably on the general standard of sewage disposal in this country and I cannot claim that there has been any marked improvement in this direction; but I certainly can say, and it gives me a great deal of satisfaction to do so, that many local authorities are awake to the need for improvement in this direction. Throughout the whole of New Zealand a large percentage of local authorities are either exploring the best solution to this problem or, having done so, are already proceeding to effect improvements in sewage disposal.

In the previous financial year loans amounting to £11,000,000 were approved by the Loans Board for 41 sewerage, stormwater drainage, and water schemes. This total was swelled by one large loan of £6½ million and two for £1 million each. This year £6½ million has been approved for 69 sewerage, stormwater drainage, and water schemes. One of these was for £2·2 million and another for £900,000. This means that over the last two years over 100 local authorities have taken in hand improvements to these essential sanitary services.

Unfortunately not all local authorities are health minded and it is difficult to persuade some to face up to their responsibilities. In dealing with certain infectious diseases, particularly bacillary dysentery and infective hepatitis which are habitually spread by bad sanitation, it was pointed out that the high incidence of these diseases could not be regarded with complacency, and the lack of proper attention to community hygiene in some parts of New Zealand, combined with a high incidence of these diseases, is causing great concern to this Department.

Rubbish Collection and Disposal

Whilst many local authorities are to be congratulated on the efficient manner in which rubbish is collected and disposed of without causing any nuisance whatsoever, others are sadly neglectful of this service. In many parts of New Zealand recreation grounds and other useful areas have been provided from Bradford tipping into otherwise useless gullies or depressions with the public hardly being aware that rubbish tipping was in progress. The efficiency with which this method of disposal of rubbish can be accomplished has been amply demonstrated by many local authorities but on the other hand there are a number of rubbish tips throughout the country which are a disgrace to any civilised community.

Water Supplies

Water supplies are examined as a routine by the Department and it may be said that the great majority of water supplies in New Zealand are reasonably satisfactory. Even in this matter however, some local authorities are difficult to convince that improvement is necessary. Many of our water supplies come from upland surface areas which in the past have proved reasonably safe, but with the rapid opening up of the country and the clearing of bushlands these supplies are becoming more and more vulnerable, and chlorination of water supplies is becoming more and more necessary.

Table 7B—Notifiable Diseases in New Zealand for the Year Ended 31 December 1958, Showing Distribution by Health Districts

ALL CASES (INCLUDING MAORIS)

Districts	Diphtheria		Enteric Fever		Tuberculosis		Cerebrospinal Meningitis		Polio-myelitis		Pneumonic Influenza		Puer-peral Fever		Eclampsia		Tetanus		Hydatids		Trachoma		Ophthalmia Neonatorum		Food Poisoning		Dysen-tery		Undulant Fever		Leptospirosis		Salmonellosis		Malaria		Lethargic Encephalitis		Anchylostomiasis		Infective Hepatitis		Pemphigus Neonatorum		Staphylococcal Pneumonia and Septicaemia		Chronic Lead Poisoning		Totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Table 7D—Notifiable Diseases in New Zealand for the Year Ended 31 December 1958, Showing Distribution by Health Districts

MAORIS

Districts	Diphtheria		Enteric Fever		Tuberculosis		Cerebrospinal Meningitis		Poliomyelitis		Pneumonic Influenza		Puer-peral Fever		Eclampsia		Tetanus		Hydatids		Trachoma		Ophthalmia Neonatorum		Food Poisoning		Dysen-tery		Undulant Fever		Leptospirosis		Salmonellosis		Malaria		Lethargic Encephalitis		Anchylostomiasis		Infective Hepatitis		Pemphigus Neonatorum		Staphylococcal Pneumonia and Septicaemia		Totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	Typhoid	Paratyphoid	Pulmonary	Other Forms	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following Abortion	Ordinary	Following 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Table 7E—Notifiable Diseases in New Zealand for the Year Ended 31 December 1958, Showing Distribution by Age and Sex

MAORIS

Diseases	Under 1 Year		1 and Under 5		5 and Under 10		10 and Under 15		15 and Under 25		25 and Under 45		45 and Under 65		65 and Over		Totals		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total		
Diphtheria ..	1	3	1	..	..	..	..	..	1	..	..	1	..	..	..	4	4	8	
Enteric fever—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A. Typhoid ..	..	..	2	..	1	..	1	..	5	..	..	1	..	..	..	11	3	14	
B. Paratyphoid ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A. Pulmonary ..	7	8	32	20	14	18	17	24	52	58	85	79	46	17	13	270	227	497	
B. Other forms ..	2	2	7	8	4	4	6	2	11	19	14	17	4	4	1	49	56	105	
Cerebrospinal meningitis ..	2	3	1	4	3	..	..	..	..	..	1	..	..	..	..	4	10	14	
Poliomyelitis ..	1	1	3	..	..	..	..	..	..	..	..	..	..	..	..	4	1	5	
Pneumonic influenza ..	1	1	..	3	..	..	..	..	..	..	..	..	..	..	..	1	4	5	
Puerperal fever—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A. Ordinary ..	..	..	..	..	..	..	..	..	..	3	..	3	..	..	..	..	6	6	
B. Following abortion ..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	2	2	
Eclampsia ..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	2	2	
Tetanus ..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	2	
Hydatids ..	..	..	..	2	..	1	..	1	3	..	2	1	1	1	..	..	2	2	
Trachoma ..	..	..	..	..	2	..	..	..	..	1	..	3	..	..	..	8	9	17	
Ophthalmia neonatorum ..	8	12	..	..	..	..	..	..	..	1	..	2	1	..	..	1	3	4	
Food poisoning ..	1	3	3	2	..	..	..	..	..	1	19	2	4	2	..	27	12	20	
Dysentery—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	37	
A. Bacillary ..	7	10	26	12	3	2	2	..	1	1	..	4	1	1	1	40	32	72	
B. Amoebic ..	..	..	..	..	..	..	..	..	3	..	2	1	..	..	..	..	..	..
Undulant fever ..	..	..	..	..	..	..	..	1	..	..	2	1	..	..	..	5	2	7	
Leptospirosis ..	..	..	..	..	..	..	..	1	1	..	2	..	..	..	..	3	1	4	
Salmonellosis ..	7	6	2	..	1	..	..	..	..	1	..	..	..	..	..	9	8	17	
Malaria ..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	2	..	2	
Lethargic encephalitis ..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	
Anchylostomiasis ..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	
Infective hepatitis ..	..	2	12	5	..	..	15	9	25	14	14	12	9	3	1	96	60	156	
Pemphigus neonatorum ..	21	16	..	..	14	20	..	..	..	..	..	..	..	..	..	21	16	37	
Staphylococcal pneumonia and septicaemia ..	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..	2	6	8	

FOOD AND DRUGS

Revision of Regulations

The major task of revising the Food and Drug Regulations 1946 and amendments has not to any great extent been promoted during the year under review, but progress has been made with the preparation of an extensive amendment incorporating proposals for better control over pesticide residues on fruit, vegetables, and other foods, a problem which becomes more complicated with the ever increasing use of poisons and other chemicals in agriculture and horticulture.

Analytical Services

The Division has a real interest in the difficulties facing the Dominion Laboratory in attracting and retaining qualified analysts on food and drugs works. This affects sampling and has hampered the Department's normal work, which includes the application and enforcement of legislation. Medical officers of health distant from the Dominion Laboratory and its branches in Auckland, Christchurch, and Dunedin have occasionally expressed the opinion that their districts are ill served for analysis, without perhaps fully realising how difficult it has been for the Dominion Laboratory to find sufficient chemistry graduates who will make a career of food, drug, water, sewage, and other examinations of the kind essential to the work of a health organisation.

The Division hopes that it will be possible that essential public health sampling, along with routine food and drug sampling, can proceed with some greater assurance in the future that the potential supervision of the field staff can be fully utilised and that chemists can be retained in analytical work that is essential for the benefit of the community.

Milk Sampling

Departmental sampling of over 13,800 specimens of milk is reviewed in table 8. Again there is a slight reduction in the total, compared with the previous year, but nevertheless it must be regarded as satisfactory when the continued strain on analytical services is borne in mind. Not all the samples procured are tested for fat, solids-not-fat, and added water, hence the percentage of non-complying samples is based on those examined for these aspects of composition. Another point worth mentioning in case comparisons are made with the results over a term of years is that milk sampling is not representative of the total quantity of milk that is sold. Departmental inspectors have their programmes whereby milk suppliers in various categories are sampled frequently, but in no sense is the sampling adjusted to the volume sold by particular traders nor is the sampling random in a statistical sense. Because the sampling includes checks on unsatisfactory suppliers and is generally directed to secure enforcement of the standards, it presents a rather blacker picture of milk quality than is actually the case.

One important and outstanding exception to this generalisation must be stated, repeating in effect a comment on Christchurch milk that has been frequently recorded in annual reports of the Department for almost 40 years. Once again the proportion of milk samples taken in Christchurch which fail to meet the standard for solids-not-fat (8.5 per cent) comprises an outstanding amount of the total non-compliance in New Zealand – 223 out of 385.

Sampling of Other Foods and Drugs

Table 9 again demonstrates that far more prosecutions have been taken against retail butchers than for any other class of food retailer for non-compliance with specific restrictions in the Food and Drug Regulations. As in last year, there has again been an increased number of prosecutions for adding preservative to fresh meat (joints of beef for example) and for adding excessive preservative to sausage meat. The increase is probably due to effective detection of offences rather than greater disregard of the regulations by butchers.

Foreign Bodies in Foodstuffs

Prosecutions taken against vendors of foods containing extraneous substances and of foods which are unsound or unfit for human consumption have tended to increase in recent years. Nearly 50 such prosecutions were recommended in 1958.

These cases where the Department has found it desirable to take legal proceedings emphasise carelessness in food processing, especially in the bakery trades. This carelessness is not, of course, peculiar to New Zealand. It can be said that a majority of foreign articles are reported as being found in bread, cakes, pies and the like. Almost anything can be expected. such things as nails, part of a heel plate, a hair clip, a finger bandage, glass chips, cigarette ends and rodent droppings were found in 1958. Prior to the Food and Drugs Amendment Act 1956 the presence of extraneous matter in food was not necessarily an offence unless it rendered the food "unsound or unfit for human consumption". The 1956 amendment made it an offence to sell a food or drug containing any extraneous thing which is harmful or dangerous, or which is offensive. The increased prosecutions are probably not due entirely to the change in law. There appears to be a greater public consciousness of a right to buy unspoiled foods and a greater willingness not only to report offences but to give evidence if need be in Court.

Table 8—Milk Sampling Summary for Year Ended 31 December 1958: Tests Applied and Results
N/C = Non-complying. W = Warning. P = Prosecution recommended.

Districts	Total Samples			Fat		Solids Not Fat		Water		Reductase		Phosphatase		
	No.	N/C	W	P	N/C	Per Cent N/C	N/C	N/C	Per Cent N/C	No.	N/C	Per Cent N/C	No.	Per Cent N/C
Whangarei	284	29	5	..	16	7.7	11	10	4.8	81	..	..	202	..
Auckland	4,812	236	40	14	64	1.3	16	18	0.4	4,799	..	0.8	4,439	..
Hamilton	1,210	42	22	2	18	1.5	7	8	0.7	634	..	2.4	995	..
Rotorua	261	27	8	..	4	1.9	4	1	0.5	107	..	8.4	187	0.5
Gisborne	392	32	1	..	10	3.6	6	1	0.4	9	..	22.2	2	..
New Plymouth	690	59	4	..	25	5.8	3	3	0.7	225	..	7.6	120	2.5
Palmerston North	1,126	165	3	5	23	4.2	12	7	1.3	681	..	13.5	68	..
Wellington	1,846	29	19	..	17	2.1	..	..	..	1,416	..	0.4	26	..
Nelson	412	21	9	3	6	1.9	14	2	0.6	85	..	7.4	107	..
Christchurch	995	256	5	1	17	1.7	223	2	0.2	311	..	..	920	0.7
Greymouth	98	8	1	..	4	4.8	4	1	1.2	14	..	..	29	..
Timaru	656	64	27	2	11	1.7	18	3	0.5	298	..	4.7	446	2.7
Dunedin	732	91	9	6	28	4.2	42	3	0.5	20	..	5.0	179	..
Invercargill	298	41	16	..	3	1.7	25	7	4.1	171	..	4.1	35	2.9
Totals	13,812	1,100	169	33	246	2.2	385	66	0.6	8,851	223	2.5	7,755	0.3

Table 9—Food and Drug Sampling, 1958

			Total Samples	Samples Non- complying	Warnings Issued	Prosecutions Recom- mended
Colouring substances	..	..	4	..	..	..
Cereals and bread	..	..	30	12	5	1
Aerating ingredients	..	..	6	..	..	..
Infant and invalid food	..	..	2	2	..	..
Sausages	..	..	665	58	29	14
Mincemeat	..	..	535	46	28	15
Bacon and ham	..	..	101	11	2	..
Fresh meat	..	..	297	52	22	20
Other meats	..	..	197	9	..	..
Meat-pickling preparations	..	..	19	2	1	1
Fresh fish	..	..	1	..	..	..
Other fish	..	..	65	2	..	..
Edible fats and oils	..	..	24	..	..	..
Cream	..	..	1,297	262	53	6
Milk shakes	..	..	856	270	98	1
Butter	..	..	170	3	3	..
Other milk products	..	..	41	..	..	..
Tea, coffee, and cocoa	..	..	4	..	..	..
Salts and spices	..	..	34	8	1	..
Sauces, vinegar, and pickles	..	..	17	1	..	..
Sweetening substances and confection- ery	..	..	14	4	..	..
Ice cream	..	..	765	177	45	..
Fruit, vegetables, and products	..	..	90	6	1	..
Jams and conserves	..	..	11	..	..	..
Culinary essences	..	..	4	..	..	..
Soups	..	..	1	..	..	..
Beverages (non-alcoholic)	..	..	129	24	11	..
Beverages (alcoholic)	..	..	33	..	..	..
Drugs and proprietary medicines	..	..	27	..	..	..
Totals	..	..	5,439	949	299	58
Seizures and destructions	..	..	99	..	..	..

OCCUPATIONAL HEALTH

The Department, as a Government agency, has clear responsibility in the field which it is discharging with assistance from other Government Departments and agencies, in particular the Workers' Compensation Board, Waterfront Industry Commission, Civil Aviation Administration, Department of Labour, and Department of Agriculture. But this is not a field in which any monopoly of endeavour is wanted. The position is well summarised by Professor Lane, Nuffield Professor of Occupational Health at Manchester, in a presidential address to the occupational health section of the Royal Health Society for the Promotion of Health in the United Kingdom recently. “. . . the promotion of health in industry is essentially the concern and responsibility of industry itself . . . the industrial manager and the trade union leader have responsibilities for industrial health which they alone can discharge . . .”.

Notification of Occupational Diseases

Table 10, page 34, shows the official notifications received together with a number of cases which have come to notice unofficially from other sources.

The following reports on occupational disease were published during the year:

Report on Adiometric Tests in a Woollen Mill by Dr Copplestone, N.Z.M.J., Vol. LVII. No. 132, p. 496, October 1958.

Vanadium Poisoning by Dr Hickling, N.Z.M.J. Vol. LVII. No. 133. p. 607, December 1958.

Poisoning from Agricultural Chemicals

Cases reported during the year included:

- (i) A 29-year-old farmer-contractor suffered from the effects of dieldrin poisoning after dusting sheep with a 3 per cent dieldrin dust. On examination of a sample of body fat, 5-7 parts per million of dieldrin were found.
- (ii) A pilot showed symptoms of dieldrin poisoning after engaging in dieldrin spraying. Some months after exposure dieldrin was still present in the body fat at a level of about 1 part per million.
- (iii) Illness was reported in two workers who had been using arsenical sprays.

Control of Health Hazards

An accepted principle in occupational health programmes is to give special attention to specific health hazards which may come to light as a result of disease notification, surveys, and investigations, or be clearly established as potential hazards in our own country from the well established experience of other industrialised communities.

Table 10—Notification of Diseases Arising from Occupation

	Whangarei	Auckland	Hamilton	Rotorua	Gisborne	New Plymouth	Palmerston North	Wellington	Nelson	Christchurch	Timaru	Dunedin	Invercargill	Total	Deaths
Official notifications	7	288	38	14	9	38	11	32	2	72	2	26	13	552	3
All sources—															
1. Skin diseases arising from occupation—															
Dermatitis due to oils and greases ..	1	13	3	2	1	..	2	4	..	9	..	3	1	39	..
Dermatitis due to solvents ..	..	28	..	2	..	2	..	7	..	..	2	8	1	50	..
Dermatitis due to various chemicals ..	1	..	3	..	..	..	4	..	..	18	..	9	..	35	..
Dermatitis due to cement ..	..	12	..	2	5	5	..	5	..	2	..	1	1	33	..
Dermatitis due to other causes ..	..	49	4	..	1	7	6	19	1	..	..	9	2	98	..
Chrome ulceration ..	..	4	..	..	..	..	..	..	..	2	..	..	..	6	..
Other diseases of the skin ..	..	7	..	..	..	..	..	..	..	1	..	..	..	8	..
Sub-totals	2	113	10	6	7	14	12	35	1	32	2	30	5	269	..
2. Diseases due to dusts, fumes, gases, vapours, or mists—															
Chronic lead poisoning .. .. .	..	..	1	..	..	1	..	1	..	..	..	..	..	3	..
Phosphorus poisoning .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poisoning from any pesticide and agricultural chemical met with at work .. .. .	..	1	..	..	..	..	..	..	..	2	..	1	1	5	..
Poisoning from any gas, fumigant, or refrigerant met with at work ..	..	4	2	..	..	4	1	1	..	..	..	2	..	14	2
Poisoning from any solvent met with at work .. .. .	..	3	..	..	..	..	..	3	..	..	..	..	..	6	..
Poisoning from any metal or salt of any metal met with at work .. .. .	..	..	..	..	..	..	1	2	..	..	..	..	..	3	..
Diseases of respiratory system arising from occupation .. .. .	..	1	1	..	1	..	..	2	..	42	..	1	..	48	1
Sub-totals .. .. .	..	9	4	..	1	5	2	9	..	44	..	4	1	79	3
3. Diseases due to physical agents—															
Compressed air illness .. .. .	..	183	..	..	..	..	..	..	..	..	..	..	..	183	..
Damage to eyesight—															
(a) Non-traumatic physical agents ..	..	4	1	11	..	2	..	..	1	..	..	2	3	24	..
(b) Trauma	1	3	1	34	..	3	..	20	..	6	..	..	4	72	..
Hearing .. .. .	..	..	..	..	..	..	..	..	..	..	..	31	..	31	..
Other causes .. .. .	..	..	..	..	..	..	..	..	..	2	..	..	..	2	..
Sub-totals	1	190	2	45	..	5	..	20	1	8	..	33	7	312	..
4. Occupational diseases due to infectious agents—															
Leptospirosis	1	15	22	8	1	8	5	3	..	3	..	..	..	66	..
Brucellosis	3	4	..	2	1	6	2	1	..	1	..	..	..	20	..
Sub-totals	4	19	22	10	2	14	7	4	..	4	..	..	..	86	..
Total—All sources	7	331	38	61	10	38	21	68	2	88	2	67	13	746	3

This is no new interest in New Zealand. Lead and phosphorus poisoning have been notifiable since 1920; the importation, manufacture and sale of matches made from white phosphorus have been prohibited by statute since 1910, while lead process regulations date from 1925.

An increasing number of such specific health hazards are coming under formal control.

1. *Lead Processes*—Table 11 summarises the supervision undertaken.

Table 11—Supervision of Workers Exposed to Lead

Occupation, Trade, or Process	Number of Firms	Approximate Number of Workers Under Supervision	Number of Examinations	Number Absorbing Lead in Unhealthy Quantity	Number of Cases of Lead Poisoning Notified
Ship-breaking, etc., in which oxy-acetylene flame is used on paint containing metallic lead or compounds of lead ..	3	107	142	..	..
Manufacture of compounds of lead	5	21	163	..	..
Smelting of materials containing lead or compounds of lead ..	18	76	297	30	..
Manufacture of lead accumulators	19	187	1,711	81	..
Manufacture of paints containing lead or compounds of lead	20	176	891	28	..
Spray painting with paints containing lead or compounds of lead	8	69	169	4	..
Lead burning in chemical plants	8	48	393	4	..
Manufacture of lead arsenate ..	..	..	..	..	..
Pottery works in which glazes containing lead or compounds of lead are used	1	6	15	1	..
Rubber works in which compounds of lead are used in manufacture of rubber ..	..	..	..	..	..
Vitreous enamelling works in which lead or compounds of lead are used in enamelling ..	1	3	9	..	..
Lead wiping or grinding or buffing (in motor car body manufacture)-	6	98	361	7	..
Tinning of metal hollow ware in which lead is used ..	1	6	6	..	..
Printing and newspapers ..	114	787	1,152	2	1
Not listed	30	131	368	8	..
Totals	234	1,715	5,677	165	1
Totals, 1957 ..	159	1,383	4,118	145	5

Of those workers found to be absorbing lead in unhealthy quantity 35 were suspended from working with lead, six were transferred to other work and the remainder were kept under close supervision.

2. *Workers Engaged in Electroplating Processes*—Table 12 sets out the results of regular supervision.

Table 12—*Supervision of Workers Engaged in Electroplating Processes*

District			Number of Firms	Approximate Number of Workers Under Supervision	Number of Examinations	Number of Workers Suffering from Conditions Arising from Occupation
Whangarei	..	..	2	3	3	..
Auckland	..	..	39	96	807	37
Hamilton	..	..	3	30	75	..
Rotorua	..	..	..	..	..	..
Gisborne	..	..	2	5	2	..
Napier*	..	..	..	..	..	..
New Plymouth	..	..	1	3	12	..
Palmerston North	..	..	3	18	54	..
Wellington	..	..	17	40	189	2
Nelson	..	..	1	1	4	..
Christchurch	..	..	20	78	673	13
Greymouth	..	..	1	1	5	1
Timaru	..	..	..	..	..	..
Dunedin	..	..	7	77	189	..
Invercargill	..	..	2	7	10	..
Totals	..	..	98	359	2023	53

*Napier district office has been established at the close of the financial year. Previously supervision of this district was handled by Gisborne District.

Conditions discovered include three chrome ulcers, fourteen cases of dermatitis and one eye injury due to a chrome splash.

3. *Spray Painting*—The Spray Painting Regulations 1940 are being reviewed by Department of Labour in consultation with this Department.

4. *Sand Blasting* has been brought under supervision in the Abrasive Blasting Regulations 1958 which forbid siliceous blasting agents in factories and call for approved protective clothing, breathing equipment, etc.

5. *Fumigation*—Precise requirements exist only for cyanide fumigation in terms of Cyanide Fumigation Regulations 1952. Methyl bromide fumigation plants operated by the Department of Agriculture, and Forest Service use of this fumigant, fully comply with Health Department requirements, as do the few private plants in the country. The use of methyl bromide and other fumigants is greatly expanding and although no accidents appear to have occurred the time appears opportune for the extension of closer supervision to all fumigation with deadly poisons.

6. *Aerial Application of Poisons*—To ensure that pilots protect themselves, ground crews, and others in the vicinity of operations, a permit system is operated by the Civil Aviation Administration in conjunction with Health and Agriculture Departments.

Advice to pilots, through C.A.A., is given on the spraying of poisons other than those under the control outlined. It is in the chlorinated hydrocarbon group that pilot effects have been reported. The use of a type of plane which allowed contamination of the pilot during operations has been brought to the notice of the C.A.A., which is taking appropriate action.

Information is regularly circulated to pilots through C.A.A. It is hoped shortly to take the subject a step further by the introduction of

a pilot rating based on a course and examination set to standards determined by the C.A.A. and the Departments of Health and Agriculture.

7. *Agricultural Chemicals*—Undoubtedly the field of major toxicological concern is that of agriculture. An ever increasing range of toxic insecticides, weed killers, etc., is being used in all its many branches. Details of poisoning cases coming to notice are shown in table 10. In terms of the Noxious Substances Regulations 1954 every possible step is being taken, in conjunction with the appropriate Divisions of the Department of Agriculture, to ensure protection of workers using these substances.

Arrangements have been made for obtaining laboratory confirmation of poisoning by chlorinated hydrocarbons and organo-phosphorus compounds details of which are available from medical officers of health. This information is published in a leaflet. The essential health precautions are published in placard form, which was again revised during the year.

It is fortunate in New Zealand that poison administration is in the same Department as that concerned with the occupational health programme, and the implications of worker protection are constantly borne in mind when poison schedules are revised and as labelling requirements are reviewed. A considerable amount of work is at present being given to this aspect by the Department's Head Office.

The drafting of special regulations to control the availability and licence the user of Compound 1080 has been commenced.

8. *Coal Mining*—The Department is conducting investigations into the health of coal miners and has published the result of one survey on coal workers' pneumoconiosis. A more comprehensive survey in the Grey Valley area of the West Coast was completed last year and its results are awaited. Dr de Hamel, who undertook this work, will spend some weeks attached to the National Coal Board of the United Kingdom towards the end of 1959.

9. *Working in Compressed Air*—The Auckland Harbour Bridge project and the work done on this subject as a result has focused attention on the hazards of caisson work and SCUBA diving. Draft regulations have been prepared and are under discussion with the Department of Labour.

Medical Nursing and First-aid Services

Table 13—Medical and Nursing Arrangements—Factories

Size of Factories by Employment Levels	Total Number in New Zealand		Medical and Nursing Arrangements					
			Full-time Nurse Provided		Part-time Nurse Provided		Doctor Available Only	Total Number Employed
	Factories	Employed	With Doctor	Without Doctor	With Doctor	Without Doctor		
Above 250	225	55,506	8	13	..	1	3	15,781
101-250	..	..	4	3	..	..	..	1,798
51-100	292	20,309	..	1	..	1	2	382
	517	75,815	12	17	..	2	5	17,961

(All doctors are engaged on a part-time basis.)

1. *Medical Services*—Where it is practicable the most satisfactory and effective way for bringing medical thinking to bear on working conditions is when industry engages its own medical advisers.

This does not mean using medical practitioners to provide an improved casualty service, but means using them to improve supervision of the health of the workers concerned. In particular the following elements need stressing: (1) interview and medical examination of workers in the factory, (2) advice on the health aspects of the working environment and on problems arising therefrom, and (3) supervision of arrangements for first aid and emergency treatment.

The organisation of occupational health services in places of employment was an item on the Agenda of the Forty-second Session of the International Labour Organisation Conference held in Geneva in 1958 and further consideration will be given at the 1959 Conference to the draft "Recommendation" prepared. When the final recommendation is settled this year it calls for serious study by all concerned in this country.

Except for the statutory examination, in factories only, of workers under 16 years of age and the requirements for regular examination in some of the hazardous processes previously referred to, there are in New Zealand no requirements for medical examinations other than in aviation and transportation services, where fitness examinations are called for in the public interest.

International conventions do exist on these matters particularly so far as young workers are concerned. These are not subscribed to by New Zealand but a review of the situation is being undertaken by a Board of Health Committee established at the end of 1958.

There is actually one industry in New Zealand where such medical examinations are prohibited by statute. This is the coal mining industry. In most countries it is an industry where great stress is put on the development of occupational health services. This prohibition appears to carry the full support of the mining unions.

It is widely conceded that medical services to industry must develop in a rather piecemeal pattern. In the United Kingdom emphasis is given to the annual examination of young workers below 18 years of age in factories, mines, and works of engineering construction; and to the provision of medical services in all factories employing 250 or more workers. The examination of young workers is a statutory obligation, while the approach to factories of 250 and more is to convince employers and workers of the advantages in establishing medical services.

If the Halifax Report* is typical of the country generally the United Kingdom has medical coverage in about 46 per cent of its factories with 250 or more workers.

We have medical coverage in 20 per cent of factories employing 250 or more (19 out of 93 factories).

The visit in early 1959 sponsored by the Workers' Compensation Board of Dr A. Austin Eagger, Medical Director of the pioneer Slough Industrial Health Service, should do much to stimulate further interest in this subject.

Examination of Young Workers—Table 14 shows the number of examinations carried out in 1958, under the Factories Act 1946.

Table 14—Medical Examination of Young Workers

	Number Examined			Number of Certificates Issued			Number of Rejections		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
First examination	1,744	1,111	2,855	1,742	1,106	2,848	2	5	7
Subsequent examination ..	318	171	489	304	168	472	..	..	..
Total	2,062	1,282	3,344	2,046	1,274	3,320	2	5	7

*Min. of Lab. and Nat. Serv. *Industrial Health*. A survey in Halifax. H.M.S.O., London 1958.

2. *Nursing Services*—The desirability of nursing services in industry is somewhat more evident because of the immediately obvious advantage of improved first-aid attention. One cannot help but be impressed by the work carried out by nurses in industry. The respect and prestige they enjoy both with management and workers enables them to contribute in many health-promotion and accident-prevention efforts.

In an endeavour to meet the needs of small plants the Department has established six industrial health centres to date.

The Waterfront Industry Commission now meets 50 per cent of the maintenance charges for the waterfront centres which are located in accommodation provided by harbour boards.

Table 15—Attendances at Industrial Health Centres

District	Centre	Attendances		Total	Referred to	
		First	Redressings		Own Doctor	Hospital
Auckland ..	Penrose ..	3,499	4,715	8,214	91	167
	Queen's Wharf ..	7,708	5,266	12,974	1,137	794
	Mount Wellington ¹ ..	..	..	..	..	..
Wellington ..	Waterfront ..	3,297	1,922	5,219	322	261
	Petone ² ..	..	..	..	..	..
Christchurch	Woolston ³ ..	969	347	1,316	108	16
	Lyttelton Waterfront ..	2,685	2,393	5,078	384	29
	Hornby ⁴ ..	..	..	..	..	..
Dunedin ..	Foreshore ..	974	768	1,742	156	181
Timaru ..	Industrial Fore-shore ⁵ ..	..	..	..	..	..
	Totals ..	19,132	15,411	34,543	2,198	1,448

¹ Land purchased. Architect appointed by Workers' Compensation Board proceeding with preliminary sketch plans.

² Land purchased. Architect appointed by Workers' Compensation Board proceeding with preliminary sketch plans.

³ Replacement site purchased. Architect proceeding with working drawings.

⁴ Land purchased.

⁵ Authority to rent rooms when available.

3. *First aid*—First aid is the first line of defence in dealing with the industrial casualty. Our statutory obligations, except in the mining industry, are fairly minimal and standards of first aid requirements are

laid down in a placard incorporating elementary first aid advice prepared by the Department of Health and issued by the Labour Department. Departmental advice has been taken into account in a variety of situations other than factories.

Many factories have excellent arrangements with trained first aiders on the job and where appropriate excellent first aid rooms. Neither trained first aiders nor first aid rooms are a legal obligation. Only the mining industry calls for first aid rooms in regulations and the freezing industry in terms of an award.

Our experience in general parallels that of the Halifax Report which states: "Little if any thought had been given by management to the training of a sufficiency of first aid workers. In too many cases it was largely a matter of luck rather than planning that first aiders were available".

It has been possible in the waterfront industry to supplement the work of first aiders by visits from Public Health Nurses. The value of such association of nurses and first aiders, which is also found in factories employing both, and in factories served by Industrial Health Centres is a point made in the Halifax Report which emphasises the value of training in good dressing techniques as may be given by a visiting nurse.

AIR POLLUTION

A Chemical Inspector was appointed to the Department in January 1958 to administer Part V of the Health Act 1956, and the Air Pollution Regulations 1957 which became operative on 1 January 1958. He spent two months with the Alkali Inspectorate in London before coming to New Zealand in April. His report appears under a separate heading.

The air-sampling programme in Auckland commenced by Mr Sullivan of the New South Wales Department of Public Health has been continued.

In Auckland continued control over the sources of atmospheric pollution will solve the fumes problem but it is clear that the area is potentially liable to the development of "smog". There can be no relaxation when the present difficulties have been cleared up. Monitoring of air pollution at various selected points in the city will need to be established or continued so that the emergence of new problems can be anticipated while the attack on current sources of pollution is developed more vigorously and on a broader front than hitherto.

An Air Pollution Committee of the Board of Health has been established and the Department has also well advanced draft proposals dealing with permissible limits of smoke density utilising Ringelmann Scale Standards.

POISONS AND DANGEROUS DRUGS

Poisons

New poisons continue to come into the country. Increasing numbers of preparations which are toxic are marketed for use in the household, in gardens, and on farms. It is most disturbing to observe the growing tendency to advertise these in a misleading manner. In one instance an advertisement stated that precautions in use are unnecessary, even though

the preparation could have such dangers that the precautions to be taken are required to be set out, and are set out, on the label of the product.

On many occasions substances that could cause poisoning are advertised as being "safe" or "non-poisonous". This last description probably relies on the fact that the article is not classified legally as "poisonous" but to call it "non-poisonous" is incorrect. There is the unfortunate result that the trader who has most concern for the public welfare is at a commercial disadvantage to his less scrupulous competitor. A revision of poisons legislation, which is in the course of preparation, is proposed to remedy this situation.

Dangerous Drugs

It is necessary to report to United Nations that the number of addicts to narcotic drugs at the end of 1958 was 84. The figure reported 12 months earlier was 42. This apparent increase is substantially due to the application of uniform criteria throughout the country in determining whether a person should be regarded as an addict. There is cause for concern at the number of patients who acquire a degree of addiction to the narcotic drugs used in treating a complaint which, while probably painful, is not likely to be fatal. Of the drugs currently used pethidine has produced the greatest number of addicts. Morphine, levorphan and methadone are also hazardous. In general the Department regards any case where a patient has been receiving a narcotic drug for a period of more than one month as warranting inquiry to determine if there is any addiction.

The new synthetic narcotic pholcodine is coming into increasing use. The amount allocated to New Zealand has been, and is likely to continue to be, adequate. There has however, been maldistribution of stocks in the country due to some wholesalers, hospitals, and chemists purchasing quantities far in excess of reasonable requirements.

ACKNOWLEDGMENTS

I wish to acknowledge with thanks the valuable help and cooperation I have received from Dr D. P. Kennedy, the Assistant Director of the Division, from all medical officers of health and their senior inspectors and inspectorial staff, also from the Principal Inspector, Mr T. W. Adams and the Senior Executive Officer, Mr H. W. Carter and all other officers of the Division.

L. S. DAVIS,

Director, Division of Public Hygiene.

REPORT OF THE DIRECTOR, DIVISION OF MENTAL HYGIENE

STATISTICS

Admissions and Discharges (Provisional Figures)

During the year, 14,984 persons (including voluntary boarders) were under care in mental hospitals and hospitals for the mentally subnormal in New Zealand at one time or another. This is approximately 600 more than last year. The average number of occupied beds was 9,895, which is 48 more than last year.

Persons admitted to mental hospitals during the year numbered 3,756, an increase of 91 on the figure for the previous year. Of the number admitted 1,865 were voluntary boarders, an increase of 139 over last year. Those admitted by the order of an authority numbered 1,891, a decrease of 48.

The total number discharged during the year was 2,842.

STAFFING

There is still a serious shortage of medical staff in the Division. A heavy burden rests on the shoulders of our medical officers, whose hospital work has added to it an ever increasing demand for their services from outside agencies. Much of the work outside the hospitals has to be carried out by the more senior staff.

Recruiting from New Zealand sources has not improved. We have been advertising in the United Kingdom but the response so far has been most disappointing. From information received it seems that there is still a serious overall shortage of psychiatrists there, and opportunities exist for the younger men and women. It seems that we shall have to build up the strength of one hospital to provide a training school for medical and ancillary staff. To staff this hospital it seems that we will have to seek authority for bursaries for overseas study to suitable young medical men about to leave general hospital, and attempt to recruit a few senior staff from overseas to fill the present gaps.

There continues to be a shortage of nurses but the position is strengthening. One hospital has a full staff. However, all hospitals have found initial difficulty in instituting the new training syllabus for nurses with the block system being used in all hospitals. We still have difficulty in recruiting Sister Tutors.

A serious shortage of social workers still exists and no scheme has yet been evolved for overcoming it.

ACCOMMODATION MAINTENANCE AND NEW BUILDING

The standard accommodation has now reached 9,161, and the overcrowding has been reduced to 656 beds in the hospitals of the Division. Nine new villas were completed and occupied during the year. It has been possible to commence building some special types of accommodation; a disturbed ward for females is nearly complete at Sunnyside and will replace old and entirely unsuitable accommodation. Plans are well advanced for new treatment admission units and for villas of a special type for those of severe mental subnormality who require much nursing care.

REPORTS OF MEDICAL SUPERINTENDENTS

It has not been customary in recent years, because of lack of space, to publish the reports of Medical Superintendents of the individual hospitals. All reports show great activity and progress and give a picture of how busy our hospitals are, how much they achieve, the great reliance the public place in them, and the very satisfactory results achieved. It will be apposite this year to give a full report of Levin Farm which is concerned with the care, training, and rehabilitation of the mentally subnormal. Many years of hard work in this "home" and in fostering public relations outside it have borne fruit.

Levin Farm

Even with the appointment of further training staff and a good establishment of occupational therapists, difficulty is being experienced in meeting the ever increasing demands of these aspects of the childrens' training. There are now approximately 250 children attending these classes, and the progress of the majority of them has been such that the scope of their training has to be steadily widening to meet their growing needs. The need for formal education by trained teachers, for technical tuition in dressmaking, carpentry, bootmaking, upholstery, etc., and for the establishment of sheltered industries in the hospital becomes steadily more pressing. Some sheltered industry work has already been successfully undertaken for both Government Departments and private firms and has provided much needed employment training for those patients suitable for this work.

We are indebted to Horowhenua College who have provided tuition for 10 boys in woodwork and six girls in dressmaking in their technical classes. We are also indebted to the Boy Scout authorities for the organisation of two troops of Scout Cubs which have just completed their first year and to the Girl Guides Association for inaugurating a troop of Brownies. We have found that these activities are providing a stimulus to initiative and independence which is most helpful to the childrens' progress.

Parties of six boys or girls have been sent with staff to the Waitarere Beach cottage for a five-day period. Twenty-four boys were taken camping for a week at the Ohau River and this was such a success that it is intended to do much more of this during next summer. On every fine Saturday and Sunday buses are hired to take the children of a villa to the beach or a picnic area for the day. A recent innovation is the holding of a weekly club night for the older boys and girls at which they entertain themselves with the minimum of supervision. This is proving most valuable in developing healthy social association between the sexes. Dances are held fortnightly and pictures weekly, and about 80 children go to the Childrens' Foundation pictures held monthly in the town picture theatre.

Cricket, hockey, athletic, and indoor bowl teams compete in the local competitions, and the outdoor bowling green will be available for play next season.

Religious services are held weekly in the chapel by the local clergy and a Sunday-school class is taken weekly.

The annual Nativity Pageant was produced and warmly received by the public and press.

A committee named the Levin Farm Rehabilitation Committee representative of interested societies social, religious, industrial, farming, etc., has been set up with the following objects:

- (1) To assist in obtaining suitable employment.
- (2) To assist in obtaining contacts for establishing home and community relationships with children requiring rehabilitation.
- (3) To assist in providing outside leadership and assistance for the Hospital Clubs and other activities.
- (4) To provide for follow-up assistance to those already boarded out in Levin.
- (5) To provide liaison between business firms and the sheltered workshops.

An ex-officer of the hospital has opened a boardinghouse in Levin and two boys who have been working for some years at the Agricultural Research Station while living in the hospital, are now boarding with him. As also are two other boys for whom employment has been found who have not previously worked outside.

In order to accelerate the rehabilitation of girls into factory work, piecework has been undertaken for private industry and two girls are doing a contract for box production for a local firm for which they are paid. They are rapidly approaching the rate of work acceptable for employment, and this will be found for them through the Rehabilitation Committee. We have received most useful guidance in regard to training from Mr Ross – the educational psychologist who visits monthly.

We are also indebted to those ladies who come regularly to assist in the training classes and to do sewing and mending.

The appointment of a full-time dentist has been of great value, not only in improving the condition of the childrens' teeth, but in stimulating the interest of the staff in their dental care. He is also carrying out research into the causation of gingivitis so prevalent in the mongols.

The generous donations that we have received from the I.H.C.P.A. and the After-Care Association have been a welcome addition to our Recreation Fund, and they have also provided equipment which has added greatly to the childrens' progress and enjoyment.

The obvious happiness of the children indicates that all have worked for what has always been the goal of this hospital, the establishment, not of an institution, but of a good home.

APPRECIATION

I wish to thank the district inspectors, official visitors, and clergy who spend their time so readily in the interests of patients. There are, in addition, numerous organisations who make arrangements for the welfare and recreation of patients. While these cannot be mentioned individually in this report, they can be assured that their efforts are valued and appreciated by both patients and staff of all hospitals.

In conclusion, I should like to express my thanks to the staff of the Division for their continued good work on behalf of our patients.

R. G. T. LEWIS,
Director, Division of Mental Hygiene.

Table 16—Admissions, Discharges, and Deaths, 1958

(a) Voluntary Boarders

Hospital	In Hospital on 1 January 1958	Admissions 1958									Total Number of Cases Under Care		
		First Admissions						Not First Admissions					
		M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Auckland	62	86	148	130	160	290	90	119	209	282	365	647
Kingseat	25	29	54	21	14	35	23	15	38	69	58	127
Raventhorpe	1	5	6	..	1	1	..	..	..	1	6	7
Tokanui	29	56	85	50	76	126	26	38	64	105	170	275
Lake Alice	1	..	1	..	..	..	..	..	..	1	..	1
Levin Farm
Porirua	58	69	127	122	114	236	90	110	200	270	293	563
Nelson	22	47	69	16	23	39	9	7	16	47	77	124
Seaview	10	14	24	7	5	12	6	4	10	23	23	46
Sunnyside	43	54	97	49	56	105	63	46	109	155	156	311
Seacliff	50	38	88	52	56	108	40	59	99	142	153	295
Ashburn Hall	24	30	54	32	85	117	19	32	51	75	147	222
Total	325	428	753	479	590	1,069	366	430	796	1,170	1,448	2,618

Voluntary Boarders Discharged, Transferred to Register of Patients, and Died

Hospital	Discharged									Transferred to Register of Patients			Died			Total		
	Recovered			Improved			Unimproved											
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Auckland ..	151	153	304	45	74	119	10	20	30	3	5	8	6	3	9	215	255	470
Kingseat ..	9	23	32	22	7	29	..	1	1	1	..	1	1	3	4	33	34	67
Raventhorpe ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tokanui ..	30	86	116	28	29	57	7	4	11	1	..	1	2	..	2	68	119	187
Lake Alice ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Levin Farm ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Porirua ..	130	156	286	54	37	91	9	10	19	4	1	5	3	2	5	200	206	406
Nelson ..	15	22	37	1	1	2	4	4	8	1	..	1	..	1	1	21	28	49
Seaview ..	11	9	20	3	3	6	1	1	2	..	..	..	2	1	3	17	14	31
Sunnyside ..	34	36	70	46	44	90	20	18	38	2	2	4	2	2	4	104	102	206
Seacliff ..	49	63	112	29	24	53	7	4	11	1	..	1	2	3	5	88	94	182
Ashburn Hall ..	44	93	137	4	21	25	..	8	8	1	1	2	..	1	1	49	124	173
Total ..	473	641	1,114	232	240	472	58	70	128	14	9	23	18	16	34	795	976	1,771

Hospital		In Hospital on 31 December 1958			Average Number Resident During the Year			Percentage of Recoveries on Admission During the Year			Percentage of Deaths on Average Number Resident During the Year		
		M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Auckland ..	..	67	110	177	57	80	137	68	55	61	10.5	3.8	6.6
Kingseat ..	..	36	24	60	27	27	54	20	79	44	3.7	11.1	7.4
Raventhorpe ..	..	1	6	7	1	6	7	..	..	..	..	..	..
Tokanui ..	..	37	51	88	28	37	65	39	75	61	7.1	..	3.1
Lake Alice ..	..	1	..	1	1	..	1	..	..	..	..	..	..
Levin Farm ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Porirua ..	..	70	87	157	60	78	138	61	70	66	5.0	2.6	3.6
Nelson ..	..	26	49	75	16	20	36	60	73	67	..	5.0	2.8
Seaview ..	..	6	9	15	7	11	18	46	100	68	28.6	9.1	16.7
Sunnyside ..	..	51	54	105	47	51	98	30	35	33	4.3	3.9	4.1
Seacliff ..	..	54	59	113	46	42	88	53	55	54	4.3	7.1	5.7
Ashburn Hall ..	..	26	23	49	21	37	58	86	79	82	..	2.7	1.7
Total ..	..	375	472	847	311	389	700	60	63	60	5.8	4.1	4.9

Table 16—Admissions, Discharges, and Deaths, 1958—(continued)
(b) Patients

Hospital	In Hospital on 1 January 1958			Admissions in 1958						Transfers			Total Number of Cases Under Care		
				First Admissions			Not First Admissions								
Auckland ..	M. 727	F. 778	T. 1,505	M. 129	F. 119	T. 248	M. 58	F. 56	T. 114	M. 10	F. 12	T. 22	M. 924	F. 965	T. 1,889
Kingseat ..	480	458	938	58	57	115	8	16	24	6	19	25	552	550	1,102
Raventhorpe ..	7	263	270	..	..	..	..	..	..	3	29	32	10	292	302
Tokanui ..	424	468	892	72	81	153	22	26	48	8	29	37	526	604	1,130
Lake Alice ..	217	..	217	1	..	1	..	..	..	118	..	118	336	..	336
Levin Farm ..	307	137	444	35	29	64	..	..	..	42	33	75	384	199	583
Porirua ..	583	848	1,431	158	175	333	87	92	179	11	11	22	839	1,126	1,965
Nelson ..	575	481	1,056	32	43	75	10	11	21	3	4	7	620	539	1,159
Seaview ..	213	294	507	15	18	33	3	2	5	14	19	33	245	333	578
Sunnyside ..	726	755	1,481	75	100	175	48	31	79	23	17	40	872	903	1,775
Seacliff ..	688	560	1,248	69	82	151	21	37	58	43	4	47	821	683	1,504
Ashburn Hall ..	10	16	26	5	5	10	1	4	5	..	2	2	16	27	43
Total ..	4,957	5,058	10,015	649	709	1,358	258	275	533	281	179	460	6,145	6,221	12,366

Hospital	Patients Discharged, Transferred, and Died																	
	Discharged									Transferred			Died		Total			
	Recovered			Improved			Unimproved											
Auckland ..	M. 78	F. 61	T. 139	M. 14	F. 9	T. 23	M. 18	F. 30	T. 48	M. 75	F. 64	T. 139	M. 61	F. 46	T. 107	M. 246	F. 210	T. 456
Kingseat ..	7	17	24	6	6	12	10	9	19	28	24	52	45	51	96	96	107	203
Raventhorpe ..	..	1	1	..	..	..	..	1	1	1	6	7	1	18	19	2	26	28
Tokanui ..	40	78	118	9	6	15	10	7	17	16	19	35	34	36	70	109	146	255
Lake Alice ..	..	..	..	..	..	..	..	..	..	4	..	4	14	..	14	18	..	18
Levin Farm ..	1	1	2	..	..	..	2	3	5	2	1	3	7	..	7	12	5	17
Porirua ..	119	177	296	13	32	45	29	18	47	65	12	77	68	95	163	294	334	628
Nelson ..	16	34	50	1	4	5	6	4	10	5	8	13	30	21	51	58	71	129
Seaview ..	6	4	10	1	2	3	2	3	5	8	8	16	19	16	35	36	33	69
Sunnyside ..	19	49	68	6	5	11	35	10	45	56	22	78	23	58	81	139	144	283
Seacliff ..	30	39	69	8	9	17	4	1	5	19	13	32	62	53	115	123	115	238
Ashburn Hall ..	4	10	14	..	1	1	2	1	3	2	2	4	..	..	..	8	14	22
Total ..	320	471	791	58	74	132	118	87	205	281	179	460	364	394	758	1,141	1,205	2,346

Hospital	In Hospital on 31 December 1958			Average Number Resident During the Year			Percentage of Recoveries on Admissions During the Year			Percentage of Deaths on Average Number Resident During the Year		
Auckland ..	M. 678	F. 755	T. 1,433	M. 664	F. 624	T. 1,288	M. 42	F. 35	T. 38	M. 9.2	F. 7.4	T. 8.3
Kingseat ..	.. 456	.. 443	.. 899	.. 437	.. 418	.. 855	.. 11	.. 23	.. 17	.. 10.2	.. 12.2	.. 11.2
Raventhorpe ..	.. 8	.. 266	.. 274	.. 8	.. 258	.. 266	.. ..	.. ..	.. ..	.. 12.5	.. 7.0	.. 7.1
Tokanui ..	.. 417	.. 458	.. 875	.. 395	.. 414	.. 809	.. 43	.. 73	.. 59	.. 8.6	.. 8.7	.. 8.7
Lake Alice ..	.. 318	.. ..	.. 318	.. 248	.. ..	.. 248	.. ..	.. ..	.. ..	.. 5.6	.. ..	.. 5.6
Levin Farm ..	.. 372	.. 194	.. 566	.. 322	.. 160	.. 482	.. 3	.. 3	.. 3	.. 2.2	.. ..	.. 1.5
Porirua ..	.. 545	.. 792	.. 1,337	.. 540	.. 759	.. 1,299	.. 49	.. 66	.. 58	.. 12.6	.. 12.5	.. 12.5
Nelson ..	.. 562	.. 468	.. 1,030	.. 552	.. 427	.. 979	.. 38	.. 63	.. 52	.. 5.4	.. 4.9	.. 5.2
Seaview ..	.. 209	.. 300	.. 509	.. 207	.. 287	.. 494	.. 33	.. 20	.. 26	.. 9.2	.. 5.6	.. 7.1
Sunnyside ..	.. 733	.. 759	.. 1,492	.. 683	.. 663	.. 1,346	.. 15	.. 37	.. 27	.. 3.4	.. 8.7	.. 6.0
Seacliff ..	.. 698	.. 568	.. 1,266	.. 624	.. 485	.. 1,109	.. 33	.. 33	.. 33	.. 9.9	.. 10.9	.. 10.4
Ashburn Hall ..	.. 8	.. 13	.. 21	.. 8	.. 12	.. 20	.. 67	.. 111	.. 93	.. ..	.. ..	.. ..
Totals ..	.. 5,004	.. 5,016	.. 10,020	.. 4,688	.. 4,507	.. 9,195	.. 35	.. 48	.. 42	.. 7.8	.. 8.7	.. 8.2

Table 17—Showing the Admission, Discharges, and Deaths, With the Mean Annual Mortality and Proportion of Recoveries Per Cent of the Admissions

(a) Voluntary Boarders

Year	Admitted			Discharged			Died			Remaining on 31 December in Each Year			Average Number Resident			Percentage of Recoveries on Admissions			Percentage of Deaths on Average Number Resident			
				Recovered	* Improved	* Unimproved																
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.				
1956 ..	743	872	1,615	409	394	803	26	22	48	283	393	676	287	373	660	55	45	50	†	†	10.2	4.9
1957 ..	773	953	1,726	450	546	996	38	29	67	327	439	766	311	389	700	58	57	58	†	7.8		
1958 ..	845	1,020	1,865	473	641	1,114	18	16	34	375	472	847				60	63	60		4.1		

(b) Patients

1956 ..	M. 883	F. 1,042	T. 1,925	M. 313	F. 456	T. 769	M. 64	F. 64	T. 128	M. 145	F. 128	T. 273	M. 383	F. 443	T. 826
1957 ..	M. 916	F. 1,023	T. 1,939	M. 323	F. 469	T. 792	M. 58	F. 74	T. 132	M. 118	F. 87	T. 205	M. 449	F. 414	T. 863
1958 ..	M. 907	F. 984	T. 1,891	M. 320	F. 471	T. 791	M. 58	F. 74	T. 132	M. 118	F. 87	T. 205	M. 364	F. 394	T. 758

*Not available. †The figures for 1956 were not divided into "improved" and "unimproved" but were combined under the heading of "unrecovered".

Table 18—Voluntary Boarders Discharged Recovered, 1958

Stay in Hospital				Males	Females	Total
13 weeks and under	..	..	..	365	389	754
14 to 25 weeks	..	..	..	53	69	122
26 weeks and over	..	..	..	25	37	62
On leave	..	..	..	30	146	176
Total	..	..	..	473	641	1,114

Table 19—Average Cash Cost of Each Patient for Financial Year 1958–59

Hospitals	Average Number Resident (Inclusive of Voluntary Boarders)	Salaries	Overtime, Penal Rates, Shift, Meal, and Standby Allowances	Bedding and Clothing	Buildings, Equipment, Improvements, Repairs, and Replacements	Farm	Fuel, Light, Power, Water, and Cleaning	Furniture, Furnishings, and Equipment, Including Maintenance
Auckland	1,425	£ 169.71	£ 40.36	£ 15.89	£ 8.47	£ 3.17	£ 15.89	£ 3.76
Kingseat (Papakura) ..	909	143.47	44.32	17.33	7.56	5.84	18.11	8.21
Raventhorpe (Bombay)	273	100.83	23.97	3.39	14.23	2.46	14.69	3.38
Tokanui (Te Awamutu)	874	148.50	42.95	18.40	8.31	31.73	21.44	8.99
Lake Alice (Marton) ..	249	131.94	69.25	21.39	10.40	15.74	21.26	11.19
Levin Farm (Levin) ..	482	180.08	67.42	33.93	10.75	4.19	31.25	10.76
Porirua	1,437	134.77	59.39	17.59	8.21	4.81	22.17	3.85
Ngawhatu (Nelson) ..	1,015	160.12	43.53	14.08	12.67	3.51	21.11	5.14
Seaview (Hokitika) ..	512	166.76	40.05	18.09	7.99	1.26	25.46	3.45
Sunnyside (Christchurch)	1,444	191.99	49.97	14.95	10.55	8.82	24.75	9.15
Seacliff	1,197	189.15	65.40	17.86	12.12	14.74	34.99	9.38
Head office .. ..	..	1.14	..	..	..	..	..	..
Average total cost ..	9,817	163.56	50.13	17.20	9.81	8.73	20.03	6.78

Hospitals	Rations	Surgery and Dispensary	Miscellaneous	Total Cost Per Patient (*)	Receipts (†)	Net Cost Per Patient (†)	Net Cost Previous Year	+ Increase or – Decrease in 1958–59
Auckland	£ 39.15	£ 5.66	£ 31.06	£ 333.12	£ 3.43	£ 329.69	£ 308.59	£ +21.10
Kingseat (Papakura) ..	43.65	5.68	27.49	321.66	9.41	312.25	297.33	+14.92
Raventhorpe (Bombay)	44.62	1.53	25.21	234.31	1.39	232.92	210.76	+22.16
Tokanui (Te Awamutu)	37.69	4.86	30.19	353.06	17.79	335.27	311.58	+23.69
Lake Alice (Marton) ..	51.45	4.57	44.22	381.41	32.38	349.03	311.21	+37.82
Levin Farm (Levin) ..	61.78	5.67	38.89	444.72	2.95	441.77	475.43	–33.66
Porirua	42.08	8.22	28.68	329.77	1.90	327.87	308.51	+19.36
Ngawhatu (Nelson) ..	43.87	3.90	25.90	333.83	5.42	328.41	308.03	+20.38
Seaview (Hokitika) ..	52.86	5.63	22.37	343.92	4.46	339.46	316.98	+22.48
Sunnyside (Christchurch)	55.48	5.93	32.23	403.82	19.40	384.42	358.38	+26.04
Seacliff	52.14	10.32	41.05	447.15	21.92	425.23	402.71	+22.52
Head Office .. ..	..	..	1.62	2.76	..	2.76	2.31	+ 0.45
Average total cost ..	46.63	6.25	32.88	365.00	10.55	354.45	334.73	+19.72

* Cost does not include interest on capital and depreciation on buildings, etc.
† Receipts from maintenance not included.

REPORT OF THE DIRECTOR, DIVISION OF HOSPITALS

1. INTRODUCTION

Last year's annual report was written on the eve of the coming into force of the Hospitals Act 1957 and the report reviewed the previous history of hospital administration in New Zealand, the evolutionary changes which led to the passing of the new Act and its main provisions.

The main change which followed upon the report of the Consultative Committee on Hospital Reform in 1953 and which had been endorsed by the Hospital Boards Association was the assumption by the Minister of Health, on behalf of the Crown, of the duty of ensuring the provision by hospital boards of adequate hospitals and hospital services in New Zealand. The changes made by the new Act stem from this new policy and from the assumption at the same time of responsibility by Government for providing virtually all the finance required by hospital boards. For the year ended 31 March 1959 this totals over £22 million, of which £15.75 million was found by grants from the Consolidated Fund and £6.25 million by hospital and other benefits from the Social Security Fund.

Some fears have been expressed by boards and by individual board members and occasionally in press editorials that the new Hospitals Act is another step towards reducing the power of local authorities and that the powers and responsibilities of hospital boards will gradually be taken over by the Department of Health. It would be unrealistic to deny that additional responsibilities assumed by central Government involve some transfer of autonomy and authority from the boards, but this has been a long and evolutionary process from increased Government subsidies early in the 1920s, the relief of patients from hospital fees in 1938 and then the stabilisation, in 1946, and subsequent reduction and ultimate abolition, in 1957, of local rates for hospital purposes.

It is much more unrealistic to profess that the Department of Health could easily assume, or has any desire to assume, the major responsibilities which belong to the boards for direct and local management of the large and complex organisations which comprise our modern hospitals. The boards employ over 20,000 staff and the job of hospital administration and management ranks with the direction of any major private or public enterprise in the country. It requires, and I have no doubt it will continue to attract, men and women of high ability and devotion to public service.

The administration of the national hospital service is a partnership between central Government and the local hospital boards. Healthy and democratic differences of opinion will arise and be argued, but there is no reason at all why Government responsibility for the planning and provision of adequate hospital services on a national basis and for supervision to ensure that the taxpayers' money is spent wisely and well,

should conflict with board responsibility for direct local management of hospital services, nor that both cannot be efficiently discharged while at the same time preserving a proper balance between central Government and a strong and vital local authority. The new Hospitals Act is an important development and deserves the attention of students of public administration in this and other Commonwealth countries.

It is appropriate to review the first year's operation of the new Act. It was mentioned in last year's report that in the months preceding the introduction of the Act a large amount of work was undertaken in the revision of accounting and financial regulations and instructions; so that boards might be fully informed and the Division might be aware of difficulties likely to arise in operation, decisions were made after a conference which was attended by one senior officer of every board and sanatorium committee in the country.

During the year a system of allocations was introduced for expenditure upon capital works and equipment financed from Government grants and this is being followed by administrative changes designed to assist the work of the boards and of the Division. The difficulties of introducing an equitable system of capital allocations to 37 boards and two sanatorium committees were substantial. The scheme adopted is based upon the mean of population and occupied beds in each board's district considered in relation to the national totals for these two factors. This provides a basic allocation and provision will be made each year for a variation of allocations for a limited number of small boards where special circumstances justify this. The introduction of capital allocations will enable boards to plan capital expenditure more evenly throughout the year and from year to year and will also allow better control of the national total of this expenditure.

This in turn has allowed administrative changes by which a large amount of work required by each board in preparing its annual programme of capital works and equipment financed by Government grant can be reduced and simplified, removed from the busy period at the end of the financial year and spread over a later period from July to December. The spread of work will help the boards, and the receipt of the programmes at a later period of the year will enable them to be examined more thoroughly and at the same time dealt with more speedily.

New Zealand's population is increasing rapidly and much expenditure on capital works of all kinds is necessary to keep pace with this growth. The needs of the Hospital Service must be recognised for due priority in a long list which includes roads and bridges, railways, harbours, power development, communications of all kinds, schools and universities, and other essential capital works. It is imperative that the best value be obtained for capital construction and that hospital projects which have been decided upon as essential are then planned, built, and commissioned without avoidable delays.

During the year and with the approval of the Hospitals Advisory Council, advice was given to boards of the procedures which should be adopted in planning and in forwarding to the Division their proposals for building projects. A hospital is such a complex organisation that an addition or alteration (to, for example, wards) must involve consideration of the effect upon the provision for X-ray, laboratory, laundry,

boiler and steam services etc., and yet the addition or alteration must be so synchronised that the hospital can continue as a working unit during the process of construction. For the same reasons it is important that building proposals should be based upon an overall development plan which should provide ahead for as long as 25 years and must take into account the estimated growth of population and the areas upon which population and industrial growth are expected to be concentrated.

During the year a study was made of the overall works programme, and hospital beds to be provided under it were projected against estimated population, looking forward 10 years to 1968. Even on a programme requiring £4·5 million loan finance each year, the ratio of beds per 1,000 of population, which increased from 7·2 in 1936–37 to reach a peak of 9·3 in 1946–47 and is now 7·9, will decrease further over this period. It was pointed out in last year's report that between 1948–49 and 1956–57 the hospital needs of a national population increased by 20 per cent had been met with only a small increase in hospital beds, and it is evident that much capital and maintenance expenditure can be avoided if this achievement can be continued. Preventive health measures, clinical advances in the management of illness and injury, the continued development of outpatient services, early discharge coupled with home attention by visiting nurses and the best utilisation of valuable hospital beds: these have all contributed, and can continue to help, in keeping down the need to provide and maintain expensive hospital beds. To provide one bed per 1,000 of population would by 1968 demand 2,700 beds. On today's costs the capital expenditure to build these would be over £10 million and would require maintenance charges for their upkeep up to £3 million per annum.

2. SCOPE OF THE REPORT

The following brief summary of the matters dealt with indicates the scope of the report.

- (a) *Hospital Accommodation and Patients Treated*: Beds available increased by 285 in public hospitals and 101 in private hospitals. This was just sufficient to maintain the ratio of hospital beds per 1,000 of population at 7·9, the same as the previous year which was the lowest ratio of recent years. Inpatients under treatment increased by over 8,000 over the previous year. The continuing close attention being paid to turnover has enabled the additional cases to be treated with practically no rise in occupied beds and with actually a decrease in the percentage of available beds occupied. However, occupancy is a complex matter affected by many factors.

Works programmes reviewed later in this report, though totalling over £36 million pounds, are unlikely to do more than maintain the ratio of available beds at the present level.

- (b) *Special Departments of Hospitals*: The numbers of X-ray examinations and therapy treatments declined whilst physiotherapy treatments and laboratory reports again increased. The Hospitals Advisory Council is investigating the scope and coverage of special department services.

- (c) *Morbidity*: Some observations are made on the clinical situation and the changing incidence of disease and injury. Information provided by medical statistics is valuable in assessing the needs of the people.
- (d) *Staff*: Staff employed in public hospitals and associated activities totalled 21,835, an increase of 896 over the previous year, of which 427 were nurses, 297 domestic. Salaries and wages payments rose by £1,057,000 to a total of £11,330,000.
- (e) *Hospital Works*: A summary of major hospital works in various stages of construction and planning is given, together with forecasts of expenditure for the next three years. The estimated cost of major works (over £10,000) for which working drawings are being drawn is £6 million while sketch plans only are being drawn for works estimated to cost £9·7 million. Ministerial consents issued for these major building works during 1958–59 amounted to £4·5 million, a decrease of £1·6 million on the preceding year.
- (f) *Finance*: Hospital boards expended a total of £24·2 million during 1957–58, of which £18·8 million was for maintenance purposes and £5·4 million for capital purposes.

Sections are also included in the report dealing with private hospitals, ambulance services, and the inspection and advisory services.

3. HOSPITAL BEDS AND PATIENTS TREATED

Hospital board and departmental institutions classed as hospitals of various types numbered 199 at 31 March 1959, a net increase of one.

Five new hospitals were added during the year, four maternity and one general. Two maternity hospitals were closed, one became a private hospital and one maternity annex is no longer separately classified as a hospital.

Health Department institutions number five, of which two are special hospitals and three are maternity (midwifery training schools).

Available Beds

The numbers of beds provided in all public and private hospitals at 31 March 1958, at end of the previous year, and at 31 March of each of the two preceding quinquenniums are shown in the following table:

Table 20

				Number of Beds Available at 31 March			
In hospital board and Health institutions—	Department of	of		1948	1953	1957	1958
General	12,581	12,451	12,710	12,873
Maternity	1,542	1,937	2,276	2,398
				14,123	14,388	14,986	15,271
In private hospitals—							
General	1,880	1,726	2,025	2,153
Maternity	761	486	400	373
				2,641	2,212	2,425	2,526
				16,764	16,600	17,411	17,797
Number per 1,000 of population	..			9·2	8·3	7·9	7·9

In addition there were at 31 March 1958, 108 hospital beds in old people's homes operated by hospital boards.

The total non-hospital accommodation for the aged in such homes was 859. The hospital board figures in the above table include 257 declared non-hospital beds. The total of non-hospital beds conducted by hospital boards was, therefore, 1,116, and the grand total of all institutional beds, public and private, was 18,764, or 8·4 per 1,000 of population.

The ratio of hospital beds to population has remained steady at 7·9 per thousand, the lowest figure of recent years, which was reached at 31 March 1957. A maintenance of the increased turnover of patients has enabled the hospitals to treat still more patients during the year with only a small increase in occupied beds. The figures in the next table demonstrate this fact.

Patients Under Treatment

The following are the figures for all hospital board and Department of Health hospitals classed as "public hospitals":

Table 21

		1948	1953	1957	1958
Average daily number of occupied beds	..	10,297	11,199	11,322	11,340
Percentage of available beds occupied	..	75%	78%	77%	75%
Inpatients under treatment	.. ..	174,814	203,657	226,452	234,805
Outpatients under treatment	.. ..	447,548	639,866	692,536	723,610
Outpatients attendances	.. ..	1,171,245	1,447,717	1,606,262	1,660,731
Dental outpatients	.. ..	28,109	31,266	38,371	32,764

For each of the above years the average number of patients treated per occupied bed per annum was 17·0, 18·2, 20·0 and 20·7. The figures show a slight drop in the percentage of bed occupancy compared with the preceding year.

A further material increase in the turnover of patients treated per occupied bed will be noted. Care will, however, require to be taken to ensure that this process is not overdone – i.e., that early discharge must not operate to the patient's detriment. Efficiency as measured by higher turnover of patients must from time to time reach its limit, beyond which the quality of output suffers. In some types of cases, such as orthopaedic, where the patient's general medical condition is good, completion of treatment at outpatient and physiotherapy clinics has enabled a considerable reduction to be effected in the previously lengthy stay in hospital of these cases. As their early discharge can save hospital beds to the advantage of their clinical progress, arrangements have been made for these cases to be transported by ambulance between their homes and the clinics without cost to the patient. Nevertheless, the practice of early discharge requires close watching and we note that, overseas, concern is already being expressed at the possibility of harmful results arising from the too zealous pursuit of higher turnover of inpatients. On the other hand, of course, a long waiting list is no credit to the hospital service if the cases could have been dealt with by more efficient use of available facilities.

Special Departments and Specialist Services

Summarised totals (inpatients and outpatients combined) of the work done by special departments in all hospitals are as follows:

Table 22

				Year ended 31 March		
				1952 (000)	1957 (000)	1958 (000)
X-ray diagnostic: Number of examinations	..			508	623	614
X-ray therapy: Number of treatments	..			75	76	72
Physiotherapy: Number of treatments	..			613	900	953
Pathology—						
Number of reports	..	..	..	688	975	1,088
Number of post-mortems	..	..	..	No. 2,430	No. 3,718	No. 4,010

The Hospitals Advisory Council has reviewed the availability and distribution of various specialist services, viz., neuro-surgery, cardiac and thoracic surgery, radiological, and orthopaedic services. The scope and coverage of services provided in the special departments whose work is detailed above are also under its investigation. The Division is also joined in an inquiry by the Board of Health into psychiatric services in public hospitals. This report is expected in the ensuing year.

There is a lack of an inspection and advisory service for X-ray departments. The Dominion X-ray and Physical Laboratory in Christchurch maintains regular inspections and calibration of X-ray equipment under the Radioactive Substances Regulations and also gives advice from time to time on replacement of obsolete and outworn equipment. However, unlike the pathological and bacteriological laboratories, the X-ray departments though visited by Divisional Assistant Directors are not subject to inspections and reports by a senior radiologist and this lack is under consideration.

A new development in the X-ray field is the installation of super-voltage units, of which four are in operation and a further cobalt unit is projected. Of the above units in operation two are of the radioactive cobalt source type.

Bacteriological Services – Training of Bacteriologists

The National Health Institute has taken over administration of the activities of the Hospital Laboratories Advisory Committee, which was established in 1957 by the Director-General of Health to advise him on training of and examinations for hospital bacteriologists. The Director of the Division of Hospitals is Chairman of the committee.

Morbidity

The Medical Statistician, who publishes from time to time figures of disease and injury as returned from public hospitals, has again kindly supplied a summary of his latest figures collected for the calendar year 1957.

I quote his comments and observations on trends which appear when these latest figures are compared with those collected for the calendar year 1950:

"Table 23—Incidence and Prevalence of Hospital Experience by Age and Sex, 1957"

—	0-7	8-14	15-44	45-64	65 and Over	Total Males
<i>Males</i>						
Number of patients	17,396	8,299	27,750	16,438	14,789	84,672
Days' stay in hospital	251,795	113,552	459,390	401,118	570,025	1,795,880
Average number of days stay per patient	14.5	13.7	16.6	24.4	38.5	21.2
Number of patients per 1,000 population in age group, 1957	82.8	54.6	60.5	77.9	162.2	75.4
Number of patients per 1,000 population in age group, 1950	81.7	63.6	62.8	72.7	131.1	74.2
Number of days' stay per 1,000 population in age group, 1957	1,199	747	1,002	1,900	6,252	1,600
Number of days' stay per 1,000 population in age group, 1950	1,234	1,054	1,428	2,062	5,643	1,836
Percentage of total days in hospital ..	7.2	3.3	13.2	11.5	16.3	51.5

—	0-7	8-14	15-44	45-64	65 and Over	Total Females	Totals, Males and Females
<i>Females</i>							
Number of patients	13,124	6,175	38,500	14,894	12,220	84,913	169,585
Days' stay in hospital	178,205	87,259	518,427	330,577	577,120	1,691,588	3,487,468
Average number of days' stay per patient	13.6	14.1	13.5	22.2	47.2	19.9	20.6
Number of patients per 1,000 population in age group, 1957	65.2	42.5	86.8	70.6	112.4	76.5	76.0
Number of patients per 1,000 population in age group, 1950	63.4	50.8	62.1	62.9	88.3	63.7	69.0
Number of days' stay per 1,000 population in age group, 1957	885	601	1,169	1,565	5,307	1,524	1,562
Number of days' stay per 1,000 population in age group, 1950	1,008	918	1,427	1,779	4,481	1,655	1,746
Percentage of total days in hospital ..	5.1	2.5	14.9	9.5	16.5	48.5	100.0

"There has been a considerable increase since 1950 in the total number of patients treated. The total of 169,585 patients recorded for 1957 represents an increase of 35,930 or 26.9 per cent over the 1950 figure. When allowance is made for the 1,112 patients admitted in 1957 for puerperal conditions, the increase amounts to 26,275 or 19.7 per cent.

"There has been an increase in the number of patients admitted for all age groups in each sex, with the greatest increases occurring in the old age group, 65 and over with 33.1 per cent for males and 49.6 per cent for females.

"It is seen that a greater proportion of the population has had inpatient treatment in 1957 as compared with 1950, the rates per 1,000 population being 76.0 in 1957 and 69.0 in 1950. Again it is in the 65 and over age group that the greatest increase is observed. The rates for males in this age group were 162.2 in 1957 and 131.1 in 1950. The corresponding figures for females were 112.4 and 88.3.

"In compensation for the increasing numbers admitted into hospital there has been a more rapid turnover of patients as shown by the figures of average days' stay. For all patients this figure has declined from 25.2 in 1950 to 20.6 in 1957, an all round saving of 4.6 days on the average. This economy in the average time spent in hospital is common to all age groups and for both sexes.

"The problem of hospital accommodation is more and more centring round the aged. As has been pointed out, it is in the age group 65 and over that the greatest increase in hospital population has occurred during the seven years under review. This applies both to the numbers admitted and to the proportion of the population in this age group requiring admission. From the next selective table some idea is obtained of the reasons for hospital treatment of the elderly.

"Table 23A

Condition for Which Admitted	Number of Patients		Rate per 10,000 of Population of Age-sex Group		Average Stay, in Days		Percentage of Total Time Spent in Hospital	
	1957	1950	1957	1950	1957	1950	1957	1950
Age Group 5: The Years of Retirement (65 and Over)								
<i>Males</i>								
1. Arteriosclerotic, hypertensive and degenerative heart disease, and general arteriosclerosis	1,449	1,168	159	138	44.2	52.7	11.2	12.9
2. Symptoms, senility, and ill-defined conditions	953	662	105	78	61.5	80.8	10.3	11.2
3. Vascular lesions of the C.N.S.	900	555	99	66	63.7	83.2	10.1	9.7
4. Malignant neoplasms	1,689	1,238	185	146	27.9	36.0	8.3	9.4
5. Hyperplasia of prostate	1,021	797	112	94	30.4	36.8	5.4	6.2
6. Accidents, poisonings, and violence	1,059	853	116	101	31.8	30.4	5.9	5.4
7. Pneumonia	744	462	82	55	20.0	39.4	2.6	3.8
8. Arthritis	200	169	22	20	103.2	66.4	3.6	2.4
9. Chronic (unqualified) bronchitis	453	272	50	32	29.0	36.9	2.3	2.1
10. Peptic ulcer	435	257	48	30	25.2	36.3	1.9	2.0
11. Respiratory tuberculosis	178	75	20	9	152.2	128.1	4.8	2.0
12. Hernia	529	391	58	46	15.6	21.2	1.5	1.7
13. Diabetes	233	173	26	20	35.9	37.0	1.5	1.3
14. Gall-bladder disease	228	180	25	21	23.0	32.4	0.9	1.2
15. Varicose veins and phlebitis	119	106	13	13	32.4	43.6	0.7	1.0
Total males	10,190	7,358	..	..	..	..	71.0	72.3
<i>Females</i>								
1. Arteriosclerotic, hypertensive and degenerative heart disease, and general arteriosclerosis	1,145	850	105	91	48.5	78.8	9.6	16.2
2. Accidents, poisonings, and violence	1,545	968	142	104	59.3	52.2	15.9	12.2
3. Vascular lesions of the C.N.S.	915	556	84	60	79.6	76.8	12.6	10.3
4. Symptoms, senility, and ill-defined conditions	879	510	81	55	76.6	70.9	11.7	8.8
5. Malignant neoplasms	1,272	796	117	86	37.2	37.9	8.2	7.3
6. Arthritis	297	163	27	18	83.8	111.0	4.3	4.4
7. Pneumonia	420	291	39	31	24.3	49.5	1.8	3.5
8. Diabetes	349	280	32	30	43.9	34.9	2.7	2.4
9. Gall-bladder disease	415	278	38	30	20.3	21.0	1.5	1.4
10. Varicose veins and phlebitis	143	135	13	15	41.4	41.8	1.0	1.6
11. Urinary infections and calculi	111	117	10	13	25.1	45.1	0.5	1.3
12. Diseases of the female genital organs, excluding tumours	338	252	31	27	17.9	18.2	1.1	1.1
13. Chronic (unqualified) bronchitis	112	103	10	11	75.5	38.5	1.5	1.0
14. Hernia	174	81	16	9	19.3	19.5	0.6	0.4
15. Peptic ulcer	195	87	18	10	25.0	30.2	0.8	0.6
Total females	8,310	5,467	..	..	..	..	73.8	72.5

"The group of diseases selected in the above table represents the principal conditions for which people in this age group are admitted to hospital. There has been an increase of 5,675 in the numbers treated for these conditions since 1950, equivalent to 44.2 per cent. The increase is spread over all the diseases specified with those diseases more especially common to old age showing the greatest movement.

"Some remarkable differences in the average length of stay for various diseases are observed. For males there has been some saving in the time spent in hospital for 12 out of the 15 diseases mentioned. Vascular lesions of the central nervous system record the greatest saving with a decline of 20 days on the average. On the other hand, there has been a heavy increase (37 days) in the average days' stay for arthritis. For females savings were effected for 10 out of the 15 diseases specified, the principal decrease occurring for arteriosclerotic and other heart diseases (30.3 days). The hospitalisation of persons suffering from cancer is playing a growing part in the old age group. Since 1950 there has been an increase of nearly 1,000 patients suffering from this disease. This represents an increase of 45 per cent in the number of patients admitted in 1957 as compared with 1950. The average days' stay of these patients has, however, declined especially for males for whom a decrease of approximately eight days on the average was recorded. Another problem of the aged is that of accidents. Altogether 783 more accident cases were admitted in 1957 as compared with 1950, and for both males and females a slightly greater length of time was spent in hospital for the average case."

There is no doubt that during the last 10 years there has been a change in the type and age grouping of persons admitted to our hospitals. The adoption by the general medical practitioner of modern treatment techniques, aided by new pharmaceutical preparations, has resulted in a reduction of admissions of many younger patients suffering from acute medical disorders, so commonly seen in hospital wards 10 years ago.

Preventive measures, more education of the public in ways of healthy living, improved housing and social conditions and specific immunising programmes, have also contributed to this trend.

Occupancy of our children's wards in hospitals has declined considerably and, except for the need to house an obviously diminishing number of tuberculous patients and those suffering from the resistant strains of staphylococcal infection, the requirement to maintain special infectious disease units has vanished. In many places it is found that these units have been adapted to accommodate the aged sick.

In the surgical wards, it is found that patients suffering from accidents and the various forms of cancer may predominate and a large proportion of these are in the older age groups. Modern specialised surgical techniques have enabled surgeons to successfully operate on older people for conditions which 10 years ago would have been regarded as inoperable.

These trends have demanded special types of wards for special groups of patients and have in part been met by adaptation of many of our old wards where the building of a new hospital on modern lines is prevented by financial and other factors. The works programme referred to later includes many adaptation projects.

Particular attention is being paid to staphylococcal infections occurring in hospitals and in particular in maternity hospitals. Tidy house-keeping and meticulous technique, and the discriminating use of antibiotics, are obviously important. Much attention is being paid to rooming-in in maternity hospitals and planning of new hospitals; for example, the proposed new St. Helens Hospital in Auckland is designed for this type of management. Some hospitals, however, have an intermediate arrangement whereby babies are placed in a nursery at night but rooming-in is practised during the day.

It will be interesting to record in future reports the effect of rooming-in as distinct from orthodox nursery management. There is still much to know about the subject and as a leader in the *British Medical Journal* of 24 January 1959 states: "It is most fervently to be hoped that this subject will be further clarified by studies now in progress".

4. STAFF

The total of employees of all hospital board and departmental hospitals (other than mental hospitals) at 31 March 1958 was 896 more than the year before. The main increases were in nursing (427) and domestic (297) staff.

Institutional staffs, i.e., excluding administration, district nursing, farm, and miscellaneous staff, employed at 31 March 1958 totalled 20,895 for the total of 16,238 beds in hospital and old people's homes. Of these beds 12,182 were occupied daily and the staff engaged averaged 1·7 per occupied bed as against 1·6 per occupied bed in the preceding year. Nursing staff engaged averaged 0·8 per occupied bed, the same as a year earlier.

Staff Employed

The numbers of staff employed in public hospitals and other institutions and activities controlled by hospital boards and the Department at 31 March 1958 and the actual payments of remuneration for the year which ended on that date, with the corresponding figures for the previous year in parentheses, were as shown below:

Table 24

	Numbers Employed at 31 March 1958		Salaries and Wages Payments for 1957-58	
			£(000)	£(000)
Institutional medical (whole time and part time)	1,239	(1,201)	1,097	(1,021)
Other professional and technical	1,437	(1,346)	915	(822)
Nursing	9,738	(9,311)	3,735	(3,291)
Other treatment staff	324	(308)	234	(217)
Domestic and institutional staff	8,157	(7,860)	4,659	(4,280)
Administrative staff	500	(478)	403	(368)
District nursing	177	(171)	131	(115)
Farm (including vegetable gardening)	61	(83)	39	(48)
Miscellaneous	202	(181)	117	(111)
	<u>21,835</u>	<u>(20,939)</u>	<u>£11,330</u>	<u>£(10,273)</u>

The above staff groups are mainly self-explanatory, except possibly "Other Professional and Technical" and "Other Treatment Staff." The first-mentioned group includes dental officers and technicians, X-ray and laboratory workers, physiotherapists and students, clinical photographers, orthopaedic technicians, occupational therapists and aids, pharmacists and apprentices, and other technical staff such as physicists, hearing-aid technicians, and the like. "Other Treatment Staff" includes theatre attendants and medical orderlies.

Medical Staff

The table below sets out details of medical staff both whole time and part time employed by hospital boards at 31 March 1959. The figures differ from those shown in table 24 as positions temporarily vacant, staff employed in departmental institutions, sixth-year students acting as house surgeons and visiting medical officers not performing regular weekly hours are included in table 24 but have been excluded from this table.

The hours of visiting medical officers have been converted to show the number of whole time employees required to give an equivalent service.

Table 25

—				Whole Time	Part Time	Whole Time Equivalent	Total
Medical administrators	..	..		47	22	11	58
Physicians—							
General	..	..	..	18	101	31	49
Tuberculosis	..	..	..	15	8	4	19
Others	..	..	..	8	56	16	24
Surgeons—							
General	..	..	..	16	96	30	46
Others	..	..	..	16	123	41	57
Pathologists	..	..	..	28	2	1	29
Radiologists and radiotherapists			..	30	34	13	43
Anaesthetists	..	..	..	19	132	31	50
Other medical staff	..	..	..	5	45	12	17
				202	619	190	392
Registrars	..	..	..	114	..	..	114
House surgeons and house physicians			..	186	..	..	186
				502	619	190	692

The period covered by this report has been one of relative stability in medical staffing characterised by the gradual development of specialist services in some of the smaller hospitals, but there has been a continuing difficulty in recruiting specialists in anaesthesia, pathology and radiology.

House Surgeons and Registrars

While there was a slight increase in the number of junior medical officers appointed this year this is largely offset by the considerable number of new beds being commissioned.

The size of present fifth- and sixth-year classes at the medical school indicates that little immediate improvement in the position can be anticipated.

Overseas Post-graduate Medical Study Leave

Leave granted for refresher courses to be taken in 1959 was as follows:

Table 26

Specialty							Number Granted Leave
Whole time staff—							
Medicine .. .. .	..	..	..	..	..	..	1
Chest Diseases ..	..	..	..	..	..	..	1
Pathology .. .. .	..	..	..	..	..	..	1
							— 3
Part time staff—							
Medicine .. .. .	..	..	..	..	..	..	1
Surgery .. .. .	..	..	..	..	..	..	3
							— 4
							<u>7</u>

Since the scheme was introduced in 1952 the distribution of grants to medical officers in the various specialties has been as follows:

						Whole Time	Part Time
Administration .. .. .	..	..	..	..	..	4	..
Anaesthetics .. .. .	..	..	..	..	..	2	2
Cardiology .. .. .	..	..	..	..	..	3	2
Chest diseases .. .. .	..	..	..	..	..	4	..
E.E.N.T. .. .. .	..	..	..	..	..	..	8
Gastroscopy .. .. .	..	..	..	..	..	..	1
General medicine .. .. .	..	..	..	..	..	2	6
General surgery .. .. .	..	..	..	..	..	5	12
Neurology .. .. .	..	..	..	..	..	..	1
Neuro-surgery .. .. .	..	..	..	..	..	1	2
Obstetrics and gynaecology .. .. .	..	..	..	..	..	..	5
Orthopaedic surgery .. .. .	..	..	..	..	..	1	3
Paediatrics .. .. .	..	..	..	..	..	1	3
Pathology .. .. .	..	..	..	..	..	9	..
Physical medicine .. .. .	..	..	..	..	..	1	..
Plastic surgery .. .. .	..	..	..	..	..	..	1
Radiology and radiotherapy .. .. .	..	..	..	..	..	9	1
Thoracic and cardiac surgery .. .. .	..	..	..	..	..	1	3
Urology .. .. .	..	..	..	..	..	..	1
						<u>43</u>	<u>51</u>

Hospital Employment Regulations

Amendments issued during the year were based on decisions reached on the recommendations made by the various salaries advisory committees towards the end of 1957.

The main changes were (a) the provision of an increased margin at the Supervising Sister level in the nursing scales with consequential amendments in the rates for related positions, (b) the introduction of overtime and overtime allowances for laboratory workers, and (c) provision for the payment of transfer expenses in the case of certain employees transferring from one locality to another on promotion or in the interests of the hospital service. This latter provision will it is hoped considerably widen the range of applicants from whom senior appointments may be made.

5. HOSPITAL WORKS AND DEVELOPMENT

Hospital development in the expansion of facilities and services by additional accommodation and new equipment, as well as in the replacement of obsolete facilities, requires a great deal of time and attention. Reference is made later to the work of the Hospital Works Committee in this respect covering the building works required for up-to-date hospital services in the Dominion.

Hospital Building Works and Equipment

The figures set out in tables 27 and 28 are indicative of the very considerable volume of hospital works in progress or in planning.

Table 27 in last year's report was compiled from returns made and forecasts supplied by hospital boards, and the Division expressed its opinion that board estimates of the rate of progress of building projects were overoptimistic. The figure of £6·8 millions estimated by the boards as likely expenditure during 1958–59 was subsequently reviewed by the Division and by Ministry of Works in the light of the known capacity of contractors, availability of labour and materials, and similar factors, and was reduced by the Hospital Works Committee to an estimate of £4·5 million.

Table 27 below is again compiled from estimates made by boards and while the total value of works is as accurate as can be established, it seems likely that boards' estimate of expenditure of £6·4 million this financial year will again require to be reduced when the Department and Ministry of Works review now in progress is completed.

Table 27—Hospital Works Programme as at 31 March 1959
(Projects over £10,000 only*)

—	Total Estimated Cost	Expendi- ture up to 31 March 1958	Expendi- ture, 1958–59	Estimated Expendi- ture, 1959–60	Estimated Expendi- ture, 1960–61	Estimated Expendi- ture, 1961–62	To Complete
Category A	£14,076,104	£2,508,220	£3,507,975	£4,563,777	£2,011,357	£777,072	£707,703
Category B	145,158	..	2,378	92,380	50,400	..	..
Category C	733,148	..	10,812	276,548	301,791	143,997	..
	14,954,410	2,508,220	3,521,165	4,932,705	2,363,548	921,069	707,703
Category D	1,978,513	..	..	346,360	550,575	490,575	591,003
Category E	5,997,391	..	..	881,150	1,835,035	1,050,871	2,230,335
Category F	9,657,332	..	..	227,531	1,796,978	2,787,992	4,844,831
Category G	3,444,850	..	..	16,000	54,000	196,850	3,178,000
Totals—							
31/3/59 ..	36,032,496	2,508,220	3,521,165	6,403,746	6,600,136	5,447,357	11,551,872
Totals—							
31/3/58 ..	38,639,681	..	6,865,542	6,705,605	5,177,179	..	15,101,287

*In addition the total value of projects £1,000 to £10,000 was approximately £600,000 at 31 March 1959.

Category A = Work commenced.
 Category B = Acceptance of tender authorised.
 Category C = Tenders called.
 Category D = Working drawings approved.
 Category E = Sketch plans approved.
 Category F = Preparation of sketch plans authorised.
 Category G = Provisionally approved.

Consents to Capital Expenditure

(1) *Buildings*—During 1958–59 consents were granted to hospital boards to undertake building projects (with 1957–58 figures for comparison) as follows:

Table 28

	1957–58	1958–59
	£(000)	£(000)
Major works exceeding £20,000	5,776	4,275
Consents ranging from £10,000 to £20,000	367	273
Consents ranging from £5,000 to £10,000	319	242
Consents ranging from £250 to £5,000	412	376
	<u>£6,874</u>	<u>£5,166</u>

As discussed in last year's report the higher figure for consents in 1957–58 reflected the authorisation of a number of major projects in that year. The consents issued in 1958–59 include the works now discussed in this section of this report.

New hospitals, wards and clinical services were completed during the year as follows:

Work and Location	Number of Beds	
	General	Maternity
Kaeo additions	6	..
North Shore hospital	4	44
Supervoltage therapy building, Auckland .. .. .	..	..
Rehabilitation centre, Otahuhu	25	..
Alteration: Ward 30, National Women's Hospital (replacement) .. .. .	..	18
Conversion: Ward 10, Hamilton, to Children	30	..
Children's Ward, Opotiki	9	..
Additional ward, Taumarunui	30	..
Westown hospital	60	..
Maternity annex, Patea .. .. .	..	8
Supervoltage unit, Palmerston North .. .. .	..	..
Additions—		
Blenheim	7	..
Outpatients department, Ashburton .. .. .	..	..
Mosgiel maternity .. .. .	..	7
Supervoltage unit, Dunedin .. .. .	..	..
New hospital, Clyde	30	8
Tuatapere maternity hospital .. .. .	..	8

The net gain in beds from these works was 166 general and 62 maternity beds.

Nurses' homes and other staff accommodation completed during the year were as under:

Location	Number of Staff Beds
Whangarei	108
North Shore (Auckland)	36
Te Puia	12
Masterton (household staff)	24
Whakatu Lodge, Nelson (temporarily nurses, ultimately domestics)	20
Waimate	16
Oamaru	46
Wakari (Dunedin)	170

Ancillary services completed during the year comprised: boilerhouses at Green Lane (Auckland) and at Westport; bulk store, etc., at Hamilton; boilerhouse and laundry at Whakatane and at Waipukurau; tutorial block at Christchurch; and store and tutorial block at Timaru.

We now come to works in progress or for which tenders have been accepted. The following is a schedule of new hospitals, wards, and clinical services buildings in this category:

Work and Location	Number of Beds		Old People's Home
	General	Maternity	
Whangarei base hospital	110	..	..
Papakura maternity .. .. .	..	5	..
New National Women's Hospital, Auckland ..	..	253	..
X-ray extensions, Green Lane (Auckland) ..	..	..	..
Maternity Block, Middlemore (Otahuhu) ..	..	60	..
Laboratory extension (Auckland) .. .. .	..	..	..
Alterations labour suite, National Women's Hospital (Auckland) .. .. .	..	..	..
Conversion, Ward 14 to Isolation, Green Lane (Auckland)	6	..	..
Benneydale maternity .. .. .	..	4	..
Outpatient and clinical block, Rotorua ..	..	..	..
Tararu Home, Thames .. .. .	..	..	15
New ward, Tauranga	30	..	..
New main block, Tauranga, with outpatient, casualty, and store	90	..	..
New ward, Taumarunui	22	..	..
Maternity annex, Te Puia .. .. .	..	18	..
Theatre additions, Gisborne .. .. .	..	..	..
New hospital, Wairoa	32	20	..
Additions, Hastings Memorial	16	..	..
New blocks A and AB, Hastings	90	20	..
Clinical services block, Dannevirke .. .. .	..	..	..
Theatre additions, Hawera .. .. .	..	..	..
Additions, Jubilee Home (Wanganui) .. .. .	..	..	30
Additions, Awapuni Home .. .. .	..	..	30
Eketahuna maternity .. .. .	..	5	..
Martinborough maternity .. .. .	..	5	..
Upper Hutt maternity .. .. .	..	30	..
Orthopaedic and casualty block, Wellington ..	..	..	..
Additions, wards, Blenheim	19	..	..
New ward block, Nelson	146	..	..
New Cashmere (Christchurch) Hospital ..	256	..	..
Additions, wards, Timaru	26	36	..
Geraldine maternity .. .. .	..	8	..
Open maternity block, Dunedin .. .. .	..	44	..
Theatre block, Balclutha .. .. .	..	..	..
Additions, Ranfurly	11	..	..
Maternity annex, Cromwell .. .. .	..	10	..
Lumsden maternity .. .. .	..	8	..
Alterations, Dee Street (Invercargill) ..	..	25	..

Nurses' homes and other staff accommodation in progress or tenders accepted are as under:

Location	Number of Staff Beds
Papakura	3
Nurses' dining room and kitchens, Auckland ..	..
"Lindisfarne" (Hamilton) medical staff ..	14
Tauranga	75
Nelson	165
Ranfurly	14

Ancillary services in progress or tenders accepted comprise the following: Central laundry, Hamilton, and laundry, Westown (New Plymouth); boilerhouse, laundry, and workshop, Thames; store, Tauranga (part of new hospital block); boilerhouse, Taumarunui and Hastings; boilerhouse and laundry at Te Puia, Hawera, Masterton, and Dunedin; kitchen, Greytown; laundry and kitchen additions, Wellington; tutorial block, Ashburton.

(2) *Hospital Equipment and Furnishings*—In the same period approvals were issued to boards for expenditure of £490,000 for items of equipment and furnishings costing more than £250, compared with £697,000 in the preceding year. Details are as follows:

Table 29

	1957-58	1958-59
	£(000)	£(000)
Motor vehicles: ambulances, trucks, cars	26	48
X-ray equipment	75	84
Furniture: nurses' homes, staff accommodation ..	73	33
Ward equipment	39	33
Surgical and specialists' equipment	168	64
Laundry equipment	99	109
Hospital equipment, including dietary, maintenance, and electrical standby equipment	217	119
	<u>£697</u>	<u>£490</u>

There was a decrease of 30 per cent on approvals in the year before in which, however, there had been an increase of 64 per cent over the previous year.

The increase under motor vehicles is due to the late delivery of vehicles which should have come to hand in 1957-58. Under X-ray equipment the rise is occasioned by approvals for replacement equipment. Laundry equipment advance follows issue of approval to order equipment for new laundries.

Total amounts of consents for expenditure on equipment and furnishings in 1958-59, and in the preceding four years were as follows:

	£(000)
1954-55	322
1955-56	451
1956-57	424
1957-58	697
1958-59	490

The expenditure actually comes to charge more regularly than these figures indicate.

Hospital Works Committee

In its advisory capacity to the Minister, the committee dealt with an increased volume of projects, and at 24 meetings held during the past year it dealt with the following agenda items of a value of over £10,000:

Hospital Board—			
Building projects	..	..	183
Development schemes	..	..	17
Land purchases	..	..	5
Loan applications	..	..	24
Private hospital loan applications	..	..	6

Details of the value of building projects considered are set out in table 27 of this report.

Planning Bases

During the latter part of the year a planning base for old people's homes was completed and is awaiting ratification by the Hospital Works Committee before being distributed. In addition much valuable information was compiled for a planning base on dietary departments, advantage being taken of the presence here of Professor E. E. Smith of the United States to carry out an analysis and study of this element of the hospital.

The Division's officers are also engaged on studying and collating information for the production of additional planning bases issues devoted to outpatients departments and to private hospitals.

St. Helens Hospitals

A committee has been set up in Head Office for the administration of these hospitals and the Division is represented on the committee. The Division has assumed responsibility for oversight of building and development projects at these hospitals, and the Hospital Works Committee considers such proposals in the same way as hospital board works. Approvals are held for the erection of new St. Helens hospitals at Auckland and Wellington and for extensions at Christchurch St. Helens.

An architectural competition for designs for the new 60-bed St. Helens Hospital at Auckland aroused considerable interest and attracted 61 entries. The entry awarded first prize was outstanding and the judges were unanimous in its selection. This design is of outstanding architectural merit which should serve its intended purpose well. The general standard of design was high and at least half of the entries would have formed the basis of a good hospital. All those gaining awards were multi-storey, compact units of simple form, as this type of scheme was considered most desirable for this project.

The experience gained in this competition indicates that a more general use could well be made of this procedure for future new hospitals. Two of the four prize-winners are newcomers to the hospital field, which indicates that there is excellent potential ability available in the architectural profession for hospital work.

6. FINANCE

Actual expenditure of hospital boards and Department of Health institutions in 1957-58 for both capital and maintenance purposes (inclusive of expenditure from loans but exclusive of amounts paid between boards or to Government institutions) totalled nearly £25 millions and is summarised thus:

Table 30

—	1956-57			1957-58		
	Hospital Boards	Departmental Institutions	Total	Hospital Boards	Departmental Institutions	Total
Maintenance ..	£(000) 17,073	£(000) 485	£(000) 17,558	£(000) 18,810	£(000) 491	£(000) 19,301
Capital ..	5,415	15	5,430	5,445	19	5,464
Total ..	22,488	500	22,988	24,255	510	24,765

Maintenance Expenditure

A summary of maintenance expenditure of hospital boards for 1957-58, with the figures for 1956-57 for comparison, is given below.

Table 31

—	1956-57		1957-58	
	Amount	Percentage of Total	Amount	Percentage of Total
Hospital maintenance	£(000) 15,147	88.7	£(000) 16,608	88.3
Interest on loans	511	3.0	619	3.3
Indoor relief	302	1.8	329	1.7
Transport of patients (including grants) ..	166	1.0	194	1.0
District nursing (including grants) ..	180	1.1	194	1.0
Superannuation	126	0.7	147	0.8
Miscellaneous	124	0.7	146	0.8
Grants, private hospitals, etc.	29	0.2	37	0.2
Outdoor relief	26	0.1	33	0.2
Administration	462	2.7	502	2.7
	17,073	100.0	18,810	100.0

For the fourth successive year hospital maintenance expenditure remains at approximately 89 per cent. As was mentioned last year the continuing increase in interest should be noted. Five years ago, in 1952-53, it was 1.9 per cent.

Inpatient Expenditure

In the year 1957-58 the average daily expenditure for individual inpatients was £3 14s. 8d. or in other words with a daily average of 11,340 patients in hospital, outgoings totalled over £42,000 each day for resident patients. On the average each inpatient cost £65 16s., as compared with £62 6s. in the previous year.

Expenditure per inpatient was made up of:

	1954-55			1956-57			1957-58		
	£	s.	d.	£	s.	d.	£	s.	d.
Treatment expenditure—									
Salaries and wages—									
Medical	0	2	11	0	3	7	0	3	10
Nursing	0	12	6	0	15	1	0	17	0
Technical and other treatment staff ..	0	1	4	0	1	7	0	1	10
			0 16 9			1 0 3			1 2 8
Special departments (e.g., X-ray, laboratory)	0	1	8	0	2	2	0	2	5
Supplies and expenses	0	3	5	0	3	9	0	4	2
			0 5 1			0 5 11			0 6 7
Sub-total, treatment ..			1 1 10			1 6 2			1 9 3
Institutional administration	0	4	6	0	5	0	0	5	6
Heat, light, power, and water	0	5	5	0	5	10	0	6	7
Household (housekeeping, dietary, laundry) ..	1	3	7	1	7	2	1	8	10
Buildings and grounds	0	3	4	0	4	2	0	4	6
			1 16 10			2 2 2			2 5 5
Total daily expenditure ..			£2 18 8			£3 8 4			£3 14 8

The top rate of inpatient hospital benefits of 25s. per day amounts to only 85 per cent of the average direct treatment expenditure. The balance, together with the maintenance and other non-treatment expenditure, was met by Government grant and other (minor) income.

Inpatients now stay in hospital an average of 18 days and the total expenditure per inpatient was made up as follows:

	1954-55			1956-57			1957-58		
	£	s.	d.	£	s.	d.	£	s.	d.
Treatment	21	8	0	23	18	0	25	16	0
Institutional administration	4	8	0	4	11	0	4	17	0
Heat, light, power, and water	5	6	0	5	7	0	5	15	0
Household	23	2	0	24	14	0	25	8	0
Buildings and grounds	3	7	0	3	15	0	3	19	0
Miscellaneous	0	1	0	0	1	0	0	1	0
			£57 12 0			£62 6 0			£65 16 0

Figures for 1954-55 are given in the above tables for comparison, that year being the first for which figures were published under the new system of institutional accounts.

Outpatient and Dental Expenditure

Outpatients numbered 724,000 during 1957-58, the average expenditure per outpatient being £1 14s. 7d. There were 33,000 dental outpatients and the average expenditure was £1 17s. 9d. per case.

Financial Control

As responsible for public funds made available for hospitals, boards and the Hospitals Division have a duty to ensure proper control over expenditure and full recovery of revenues due.

Institutional maintenance expenditure figures have now been presented in divisions according to the main activities of our hospitals for four years. It is fair to say that the presentation of expenditure figures is now uniform and valuable information for control of expenditure is readily available with comparable figures for four years. The presentation segregates the actual expenditure for which each controlling officer is responsible thereby enabling their cooperation to be obtained in the

control of expenditure. Fuller details are published in the Appendix to the annual report. The value of these figures is dependent upon uniformity in preparation. Now that the accounting information has been revised and the new system is working, it is proposed to revise the statistical information published in the Appendix to bring about uniformity of preparation of all statistics of value to boards for financial control.

Financial conditions require that hospitals should expend the funds voted by Parliament to the very best advantage, avoiding waste and extravagance. This can only be achieved by close supervision by boards of all their activities, coupled with careful control of outgoings to ensure that full value is being received for money spent.

Besides benefits paid from the Social Security Fund and grant by Government, boards have material revenue from other sources, principally fees payable by patients not entitled to free treatment, such as workers' compensation cases, accident cases where damages are recovered and overseas visitors. It is important that boards should recover the full cost of relief afforded these cases, both as inpatients and outpatients.

Government Grants

Payments of Government grants to hospital boards during 1958-59 amounted to £15,774,000, being £12,875,000 for maintenance and £2,899,000 for capital purposes. The preliminary estimate for 1959-60 is £17,500,000.

7. INSPECTION AND ADVISORY SERVICES

A programme of inspection of all aspects of hospital board activities has been actively pursued by this and other Divisions of the Department. During the year I accompanied the Minister on a tour of inspection of hospitals in the South Auckland, Waikato, and King Country areas, and the Director-General and I also visited many other hospitals. We made four tours each of about two weeks' duration, visiting many institutions and offices and meeting members of boards for discussion of local problems. The building and development proposals and medical activities have been inspected by the three Assistant Directors of the Division, nursing activities by the Inspectors of the Nursing Division, architectural problems and engineering services by the Department's architect and his staff and its advisory engineer, and the dietary and physiotherapy departments by the Inspecting Dietitian and Inspecting Physiotherapist respectively.

Several pathologists from the larger hospitals continue to inspect and report annually on the laboratories at other hospitals, and their services are of great value to this Division.

Nurse Inspectors attached to the Department's District Offices supply valuable inspection reports on maternity hospitals in their district.

The Advisory Officers and Advisory House Managers carried out inspections in 13 hospital board districts during the year, their programme of inspection covering all administrative services and activities, and in the past three years have completed a comprehensive inspection of the services of all hospital boards and sanatorium committees. As the result

of information supplied and systems evolved by these officers most of the larger and intermediate hospital boards have mechanised their ledger and pay roll work, and in some cases, their stores accounting work also. A system of imprest supply of stores to wards and departments has been evolved, and these improvements in procedures should prove beneficial to administrative efficiency.

On the recommendation of the Division some boards have commenced a system of dispatching all linen, including foul linen, to the laundry without pre-washing in wards and departments. This system will be brought to the notice of other boards and should result in a saving in nursing time and the elimination of small washing machines in wards and departments.

Now that a general picture of board activities has been obtained, the Advisory Officers will, in the ensuing year, be concentrating upon revising the Appendix to the annual report and compiling a *Hospitals Manual* to facilitate reference to departmental requirements and for guidance of officers in hospital administration procedures.

The Department was fortunate in having one of the Fullbright scholars, Professor E. Evelyn Smith, attached to the advisory staff for eight months.

Professor Smith, who was Professor of Institutional Management of the University of Illinois, was interested in all aspects of quantity food service including planning, equipment, and staff training, and visited 28 of our hospitals.

The chief problems in our hospital food service as Professor Smith saw them were briefly—

The shortage and consequent overloading of trained supervisors, i.e., dietitians, (hence the need to reconsider the requirements for training with a view to shortening the course a little); the need to find and train subsidiary workers to help with supervision in specific areas; the formulation of more definite policies in regard both to planning and administration of the whole of the food service unit; a real need to improve considerably the physical conditions under which the food service is provided.

With all of these problems Professor Smith was able to make valuable suggestions. She contributed largely to a four-day refresher course and study week for senior dietitians held in the Department in August, and at a special meeting of the Dietitians Board discussed the training course for dietitians, suggested modifications in this, and stressed the need for employment and if possible training of auxiliary personnel at supervisory level.

Discussions were held with our administrative staff in regard to policies affecting all aspects of hospital food service, and many hours were spent in discussions with our own and hospital board architects, of sketch plans and working drawings for many hospitals and nurses' homes.

An excellent address given by Professor Smith to the Hospitals Division and attended by the architects employed by hospital boards throughout New Zealand is now being printed for distribution to all hospital boards, their architects and dietitians.

8. AMBULANCE SERVICES

The operation of ambulance services continues to receive my personal attention as Chairman of the Ambulance Transport Advisory Board. I am pleased that considerable progress has been made in developing and organising the ambulance service of the country on orderly lines both as regards operation and finance.

Ambulance Transport Advisory Board

During extended leave of absence granted to Mr A. V. Keisenberg on account of illness, Mr F. L. Gibson, Chief Advisory Officer, acted as a member of the board and member of the Working Committee.

The board met quarterly during the year and in addition numerous items were dealt with after consulting board members by letter. I much appreciate the willingness of board members to serve in this way and the advice received from them. The services also of the Working Committee which met on seven occasions during the year are invaluable.

Reference was made in the last report to the resignation of the Ambulance Advisory Officer. No appointment was made in replacement, but it was arranged that the board's secretary should undertake any visits necessary in connection with ambulance finance or administration. Three visits were made during the year by the secretary. The Chairman of the Wellington Free Ambulance very kindly offered that limited use could be made of the services of the Superintendent-Secretary of that service on technical aspects of ambulance vehicles and operation, and we are appreciative of the assistance we have been able to have, especially on specifications for new vehicles.

Air Ambulance Services

Expansion of air ambulance facilities during the year has been very satisfactory. Besides aircraft of NAC and RNZAF 10 aircraft operated by aero clubs and private operators have been approved for air ambulance purposes. We again express our appreciation of the help received from the RNZAF ambulance service in meeting emergency calls.

A committee set up under the auspices of the Standards Institute has formulated a standard kit set of interchangeable air/road ambulance equipment to facilitate transfers of patients. Arrangements are now being made for a trial trip using this set of equipment, after which the committee will submit its report.

Road Ambulances

Road ambulance services are operated with 170 vehicles from 97 stations throughout the Dominion. Of these, 37 stations (54 vehicles) are operated by hospital boards, representing 37 per cent of the ambulance services, and the remainder by the Order of St. John, the Wellington Free Ambulance and a number of smaller voluntary organisations. Having regard to the substantial voluntary labour provided by these voluntary organisations, in addition to considerable sums contributed

towards the cost, the policy of encouraging conduct of ambulance transport by voluntary agencies justifies itself. Special credit is due to them for the work they have done.

Finance

Grants made by hospital boards to subsidised organisations as their agents during the year amounted to £135,520 for maintenance purposes and £6,000 for capital purposes, all of which was for six new vehicles. Ambulance services operated by hospital boards incurred expenditure of £53,460 in 1957–58 for maintenance and approvals totalling £6,200 were given for capital expenditure for replacement of vehicles (three). The total annual charge on the Consolidated Fund for road ambulance services appears to be stabilised at just over £200,000.

Subsidised organisations receive only such assistance as is clearly shown to be necessary after careful examination of their financial position. In the consideration of applications for grants for replacement vehicles the board makes full use of and gratefully acknowledges the helpful advice of officers of the Transport Department. As funds now allowed in grants for depreciation are set aside and invested for purposes of ambulance replacements, the necessity for capital grants except for new services will disappear.

Future Policy

The board has under active consideration at the present time personnel training, revision of standard specifications, right of way in traffic for emergency vehicles, and medical standards for ambulance drivers. The conference of operators referred to in our last report was held during the year and further detailed consideration of a proposed personnel training syllabus has been given by the board itself. The proposal has been circulated to operators and their comments are now being collated. Except in extreme emergency and with the assistance of a traffic officer, ambulances should not require precedence over all other traffic. In fact, it is considered that undue haste in transporting patients can be harmful. Ambulance men must, therefore, exercise a proper discretion in handling their cases. This subject will be dealt with in the training scheme. A proper medical standard of fitness on entry with regular check-ups is under consideration. Safety of the patient demands that transport operators be medically fit, both as drivers and to give first-aid attention as necessary.

On completion of a study of the standard accounts and statistical information now being received it is intended to implement the proposed financial policy under which voluntary organisations will on the one hand be credited with a value (notional expenditure) for voluntary labour provided and for use of assets provided from their funds and on the other hand will be expected to contribute (notional contribution) something additional to the equivalent of the standard charges. On the introduction of this principle any sums raised by such organisations in excess of the standard charges plus the notional contribution will belong to them and will not be taken into account in assessing the hospital board grant.

9. PRIVATE HOSPITALS

The following table shows the number of private hospitals and beds as at 31 December 1958. The comparable position as at 31 December 1957 is shown by the figures in parentheses.

Table 32

Type of Hospital	Number of Hospitals	Number of Licensed Beds
Maternity	33 (31)	292 (274)
Medical and Surgical ..	50 (51)	968 (978)
Medical	62 (58)	870 (801)
Mixed	8 (9)	435* (444)*
Totals ..	153 (149)	2,565 (2,497)

*Consists of 100 maternity beds and 335 medical and surgical beds in 1958, and 107 maternity beds and 337 medical and surgical beds in 1957.

It is pleasing to note that the total number of licensed beds has increased by 68. Including those in mixed hospitals, maternity beds in private hospitals have increased from 381 to 392, but the overall position is slightly better than this in that the seven less maternity beds in mixed hospitals have not been lost, the institution concerned being now a public hospital. In total, beds available for medical and surgical cases have increased from 2,116 to 2,173.

The scheme for assistance to private hospitals by way of loans for capital works was continued during 1958, additional loans to the value of £67,405 (including £10,520 on a suspensory basis) having been approved during the year. Advances made during the year ended 31 March 1959 totalled £250,920.

Private hospital projects in progress or planned, for which loans have already been approved, will provide 74 additional maternity beds and 40 additional medical and surgical beds. Several other proposals involving additional beds are under action so that the general position can be regarded as very satisfactory.

10. CONCLUSION

Six staff changes occurred during the year. Mr I. C. Steinmetz has become the Department's Chief Inspector, being replaced as Hospital Advisory Officer by Mr J. J. Morgan. Mr P. E. Wixon, Assistant Architect, has returned to Ministry of Works, being replaced by Mr H. H. Geddes. Messrs J. D. B. Woods and J. Zethoven were appointed Assistant Advisory Officers and Mr T. N. Clarkson took up duty as an Advisory House Manager. Mr E. M. O'Connor replaced Mr Morgan in the Finance section of the Division.

The first year of operation under the new Act has been arduous but very interesting for all officers of the Division. To them all I offer my very sincere thanks for their willing and valuable services during the year.

C. A. TAYLOR,
Director, Division of Hospitals.

REPORT OF THE DIRECTOR, DIVISION OF NURSING

NURSES AND MIDWIVES BOARD

The board has held four meetings during the year. In order to facilitate the changeover from the old curriculum to the new, various measures have been introduced so that by December 1960 no final examinations under the old method will need to be held. Except for a few problems in individual nurse training schools, curriculum planning has gone very smoothly and nursing schools are to be congratulated on the efforts made by all concerned.

A special examination was held for male nurses registered under the two-year curriculum to enable them to have the same status as male nurses will have in the future under a three-year training scheme. Forty-five per cent of those sitting were successful in passing this examination. In June 1960 the board will hold a similar examination for male nurses as by that time the three-year curriculum will be fully introduced into all male nurse training schools. Male nurses undergoing training in Air Force and Army hospitals will undertake the first portion of the male nurse syllabus in a period of two years and will be granted a concession of one year should they wish at some later stage to qualify in a civilian male nurse training school.

Reciprocal agreements in relation to the new curriculum are at present being studied by overseas countries but at the time of writing this report confirmed replies have been received from only Scotland and South Africa. Other countries have intimated that committees of their Registration Boards are studying the new curriculum with a view to reciprocal registration being negotiated.

NURSE TRAINING SCHOOLS

This year's returns depict the very pleasing feature of an increase in student nurse intake of 522 over last year's figures. It would appear that the introduction of the new curriculum plus the lowering of the age of registration has had a very material effect on recruitment. Cadet nursing schemes which were commenced in order to bridge the gap between leaving school and entry into nursing now fortunately appear to have practically ceased as the numbers now employed throughout the country are negligible. It means that our hospital wards can well be staffed by only two categories of untrained personnel, e.g., hospital aids who can carry out many of the non-nursing duties and thus free the student nurse to spend more time performing actual nursing care for the patients.

Trained staff figures show a slight decrease on last year's figures. I would consider that this is due to the changes caused in implementing the new curriculum. At the present time nurses who have passed the Final State Examination have been permitted to go straight on with their maternity training before registration as a nurse has actually been granted. This procedure will cease by December 1960 as by that time there will be no nurses training under the old curriculum.

The number of closed beds due to nursing staff shortages has been more than halved, which is also a very pleasing outcome of the increased intake of student nurses.

The standard of education of girls entering nurse training also shows improvement. There are now only 24 student nurses in training who have primary school certificate only. Of the 4,395 at present in training 2,309 have had three or more years' secondary education. Of these 1,176 have School Certificate, 241 have Endorsed School Certificate, 397 University Entrance, and six possess a university degree. Matrons this year, because of the number of girls offering, have been able to make a better selection and have sometimes been in the happy position of accepting only those who have School Certificate. It may be that the time is approaching when this certificate will be the entrance requirement to nursing. It is demanded by many nursing schools overseas and it is apparent that we will in the near future be in the happy position of doing likewise. School Certificate standard is not the final criteria for selection of student nurses, but provided personality, temperament, and intelligence are also taken into consideration academic qualifications must also be considered when selection is being made.

There are at present 158 Maori girls in nurse training, 25 Pacific Islanders and 31 of other races. There is a slight increase on last year's figures which is very promising for the future. If a Maori girl possesses the necessary academic qualifications she has equal opportunities with the Europeans of entering such a profession as nursing.

The ratio of full-time nursing staff to average patients nursed is 1 to 1.2 and the ratio of registered to student nurses, is 1 to 2.9.

MALE NURSE TRAINING SCHOOLS

There are at present 30 student male nurses in training which shows a slight decrease on last year's figures. Only six students have three or more years of secondary education the majority coming within the one to two years' educational group. It will be interesting to see what effect the three-year syllabus has on the recruitment of males to this profession.

NURSING AID TRAINING SCHOOLS

This year there are 308 nursing aids in training which shows an increase of 60 over last year's figures. One hundred and fourteen of these trainees are Maori girls. The new syllabus has now been introduced into all schools. A little over half of the students have had from two to three years of secondary education. The ratio of total nursing staff to average patients in these schools is 1 to 2.3 and the ratio of full-time registered staff to student nurse aids is 1 to 1.6.

OBSTETRICAL TRAINING SCHOOLS

Midwifery

Fifty midwives completed training in December 1958 and an additional 48 are undergoing training. This is the first time for some years that the number of trained midwives has approximated what is required for senior and administrative positions in obstetric hospitals. The increased building programme for this type of hospital will mean in the future that at least a further 50 midwives will require to be trained each year.

Maternity

The inclusion of maternity nursing in the basic nursing curriculum has resulted in more staff being available in these training schools. Three hundred and seven sat and passed the maternity examination in December 1958 and an additional 349 are at present undergoing training. The total number of students in maternity hospitals as at 31 March was 489, of these 184 are undergoing 18 months' training.

32,732 confinements took place in obstetrical training schools this year which is an increase of 2,700 on last year's figures. 3,323 of these confinements took place in the three midwifery training schools.

NURSES' POST-GRADUATE SCHOOL

A total of 63 students completed the 1958 course and as well as the 56 students from New Zealand, seven students attended from the following countries: Lebanon, Thailand, Indonesia, Australia, and Hong Kong.

In the third term Miss Cathie, Acting Nurse Instructor, was appointed to the position of Nurse Instructor. Miss R. A. Davis on her return from England, where she took a course for Occupational Health Tutors at the Royal College of Nursing, was also appointed Nurse Instructor and will undertake the Industrial Health lectures.

At the November meeting the committee agreed to offer limited accommodation to a group of Health Education Officers and to allow them to be included with the nursing students in lectures suited to their specific requirements. Three students have availed themselves of this opportunity and have commenced a Diploma Course in Health Education under the direction of Dr Derek Taylor, Director of the Division of Health Education.

PUBLIC HEALTH NURSING

This year has again been one in which the Nurse Inspectors and many public health nurses have not been able to keep to a steady programme routine. In all districts the organisation and subsequent carrying out of the poliomyelitis vaccination programme has interrupted many aspects of normal health supervision. Once the poliomyelitis vaccination programme is centred on the pre-school entrant group only, public health nursing should be able to resume the "even tenor of its way".

Integration of industrial nursing into the public health nurse's case load has continued to proceed slowly. There is now a better appreciation of what the present policy regarding this aspect of public health entails as far as Nurse Inspectors and their staff are concerned, and most districts are making better efforts to carry out the policy.

Plans for the public health experience required for student nurses in the basic training curriculum are progressing. There have naturally, and as was expected, been some problems to overcome regarding this experience. However, Nurse Inspectors and public health nurses have been able to overcome most of these problems. As we approach the time when third year students are ready for their two weeks' field experience Nurse Inspectors are already planning appropriate programmes for public health nurses to have these third year students with them.

Recruitment this past year has not been as satisfactory as last, and there is still difficulty in attracting recruits for more isolated areas.

IMMIGRANT NURSES

The scheme whereby nurses from the United Kingdom were recruited to come to this country under term of contract to the New Zealand Government for a period of two years was discontinued last year and the Nursing Officer seconded to the London Migration office returned to New Zealand. Nurses who had been accepted up to the end of last year will still come out under the scheme. The reason why it was considered the scheme could be abandoned at this stage was because 64 registered nurses and seven pupil nurses migrated under contract whereas approximately 150 came independently.

We have been grateful for the help given by these overseas nurses and although a number of them returned to Great Britain at the completion of their contract they have indirectly stimulated other nurses to come to nurse in this country. The number of inquiries from registered overseas nurses appears to be increasing; therefore the need for sponsored migration seems to be unnecessary.

HEALTH OF NURSING STAFF

There was again a high incidence of influenza amongst nursing staffs. Boils, septic fingers, other staphylococcal infection and gastro-enteritis are still high on the list. Three cases of pulmonary tuberculosis occurred amongst student nurses and one of a registered nurse. Twenty-two cases of student nurses were classified as "fatigue". This is the first time this condition has been mentioned and this deserves some investigation as to its cause and prevention where it has occurred. Several hospitals have improved their methods of administering the nurses' health service and have now well conducted daily clinics where good records are kept. In a number of hospitals, however, the service is still not well organised. I cannot stress too much the importance of a properly organised health service as a means of conserving health, reducing expenditure and, last if not least, preventing wastage of student nurses.

ISLANDS SERVICE

Recruitment to this service is still below requirements. I was successful in securing applicants for the Matrons' positions at Niue, Tonga, Rarotonga, and Lautoka. Although several nurses from individual territories who are undergoing training in New Zealand will return to give service at the completion of training, the numbers are not nearly sufficient to fill staff replacements. These territories offer a wonderful nursing experience in administration and practical nursing during a term of two years, and it is a great pity that more registered nurses, midwives, and public health nurses do not avail themselves of this opportunity to widen their nursing knowledge in the care of patients suffering diseases not prevalent in this country, and in which their present knowledge can only be obtained from text-books.

GENERAL

For the first time for several years the Nursing Division has a full professional staff which will enable more time to be devoted to hospital inspection visits.

I wish to thank the Matrons and senior staff of hospitals and the Department of Health staff who have retired during the year after completing 30 years or more of nursing for their long years of service to the nursing profession and to wish their successors many happy and successful terms of office.

During the year recipients of honours conferred by Her Majesty Queen Elizabeth II were: Miss A. M. Kearns, Miss N. P. Kohere, Miss E. A. Rose, Miss S. Lusk, all of whom were invested with M.B.E.

In conclusion I again wish to place on record my grateful thanks to the staff of my Division, both professional and clerical, for their continued loyalty and devotion to duty, and to assure them that it is through their combined efforts that the Division functions so successfully.

F. J. CAMERON,
Director, Division of Nursing.

REPORT OF THE DIRECTOR, DIVISION OF CHILD HYGIENE

STAFF

The number of medical officers working for this Division is now 46. Of these, 20 are full time and 26 part time. The latter are approximately equivalent to 11 full-time medical officers. This is a slight increase over last year, but is still inadequate to give a proper service to the children of this country. At present, much of the work has to be done by nurses, and where physical defects are concerned this would appear to be a satisfactory procedure. Nurses, however, cannot be expected to detect and advise on the psychologically maladjusted, emotionally disturbed or mentally retarded child. For these conditions experienced medical officers are required. The post-primary schools still do not receive a routine medical inspection from this Department, and except when a special request from an individual school is received or when a BCG or poliomyelitis vaccination programme is arranged, few visits are paid by our medical officers.

MEDICAL WORK AMONG PRE-SCHOOL CHILDREN

Work in the pre-school clinics has been necessarily curtailed owing to so much of the time of medical officers and nurses being taken up with poliomyelitis vaccinations. Nevertheless, it was possible for the medical officers to see and examine 24,554 pre-school children. Most of this work is done at Plunket clinics, but public health nurses arrange clinics at kindergartens, day nurseries and at nurses' cottages in the country. Often it is possible to arrange for pre-school children to be seen following an inspection of primary school children.

The common defects found among European pre-school children are unhealthy tonsils (1.46 per cent), eczema and other skin defects (0.94 per cent), squint (0.84 per cent), flat feet and other orthopaedic abnormalities of the lower limbs (2.10 per cent). In Maoris, in addition to these defects, impetigo (0.56 per cent), chronic respiratory infections (2.23 per cent), otitis media (1.11 per cent), and hearing impairment (0.84 per cent) are very prevalent. Untreated dental caries (7.52 per cent) even in the pre-school period is far and away the commonest defect among the Maoris, while among European children it is second only in incidence to unhealthy tonsils.

The medical inspection of pre-school children is of great importance as, during that period of a child's life, defects can be discovered and treated before they can seriously affect the child's growth, development and education. As so many of these defects are not suspected by the parents and frequently escape their observation, it may only be by routine inspections carefully carried out that they can be discovered and treatment arranged. The importance of health education is rated

very highly by the staff of this Division and it is felt that so much of this can be imparted to mothers when they bring their children to these clinics.

WORK IN PRIMARY SCHOOLS

The system of "culling" referred to in previous annual reports was continued during the year. Under this system the primary routine examination of children is carried out by public health nurses, and only those children who are found by the nurses to have suspected defects, or those children whom the parents or the school teachers wish to have medically examined, are seen by the medical officer. This system has worked very well in the past as the medical officers have not had to spend a lot of time in examining healthy children. Though economising on medical manpower, there are however some disadvantages. With the improvement in general physical health, more attention is required for the emotionally disturbed and psychologically maladjusted child – the diagnosis of which is predominantly a medical officer's function. Some form of parent-teacher-doctor-nurse conference would help and would bring to light many cases which require expert investigation and treatment.

Statistics for the year show that the commonest defects among European primary school children are untreated refractive errors (1.85 per cent), unhealthy tonsils (1.11 per cent), and untreated dental caries (0.77 per cent), and in the Maoris, skin conditions (2.72 per cent), refractive errors (1.16 per cent), untreated dental caries (2.68 per cent), and otitis media and impairment of hearing (4.66 per cent).

The general position, however, is one of improving health standards among the school population. The 1949 annual report giving 1948 figures shows the percentage of defects for European children as 30.67 as compared with 8.06 for 1958. Maori defects in 1948 were 42.92 whereas in 1958 they were 15.83. The following table shows where some improvements have occurred and also shows defects which have so far not responded to existing measures:

Table 33

Defects					1948 Percentage	1958 Percentage
Skin .. .. .	..	..	..	E.	1.91	0.42
				M.	9.11	2.72
Dental caries ..	..	..	..	E.	6.08	0.77
				M.	19.03	2.68
Organic heart disease ..	..	..	..	E.	0.54	0.29
				M.	0.20	0.83
Tonsils .. .. .	..	..	..	E.	9.84	1.11
				M.	11.67	1.04
Respiratory .. ..	..	..	..	E.	1.20	0.30
				M.	4.03	0.88
Otitis and defective hearing	..	..	..	E.	0.38	0.48
				M.	1.73	4.66

The presence of parents at the medical examination of school children, although it inevitably cuts down the number who can be seen, is regarded as of great value by medical officers and nurses, as they are then able to question the parents on such things as sleeping and dietary habits, and are able to impart helpful advice.

MAORI CHILDREN

The statistics show a great improvement in the incidence of defects in Maori children; with one exception, that of otitis. The latter shows a defect rate of 3.78 per cent as compared with 2.17 per cent in the previous year. This increase is more apparent than real and is undoubtedly due to the increasing interest in this problem, particularly in the Rotorua area. Few cases of malnutrition have been reported, but lack of cleanliness and lack of interest on the part of the parents are marked in some areas.

The Maori Affairs Department has done a lot to stimulate interest among the Maori elders in health matters, and there are signs of increasing cooperation of the Maoris in the health measures that are available for them.

AUDIOMETRY

Very much greater interest has been taken in the problem of deafness. Early discovery of the condition is essential if the best results are to be achieved, and public health nurses have all received instruction during the year in methods of testing for hearing loss in infants and very young children.

The Auckland Audiology Clinic, under the direction of Mr A. C. Miller the otologist, with Mr C. L. Allen and Mr De Vere of the Auckland School for the Deaf, together with Dr Houghton (School Medical Officer), a psychologist and a social worker, has developed into a satisfactory instrument for the diagnosis, treatment and guidance of deaf children. A similar clinic is being planned for Christchurch, and smaller clinics have been set up at Hamilton and Whangarei. Wellington Hospital has also developed a first class audiology service to which children can go.

It will be seen therefore that a service covering the whole country by which deaf children can be discovered, diagnosed, treated and managed is fast coming into operation.

For many years the Education Department has had schools for the deaf, and recently they have trained specialist visiting teachers of the deaf whose function is to assess hearing loss in children and to advise teachers and mothers on the management of those deaf children who for various reasons are not attending one of the schools for the deaf. It is hoped that the numbers of such specialist teachers will increase, as it is not uncommon for medical officers and nurses to find children who should be wearing hearing aids not using them for such reasons as the battery being run down, the cord being broken or the ear-piece not fitting well. Not only is it a waste of money to supply hearing aids which are not being used, but the child itself is suffering because of its inability to hear and understand its lessons.

The problem of chronic otitis in the Maoris is one which almost defies solution until the Maoris themselves actively cooperate in seeking advice and treatment and carrying out the necessary home treatment when required to do so.

The routine audiometric tests being done in schools have continued, but it is proposed to change over gradually from gramophone audiometers to pure tone sweep frequency testing on portable audiometers. The reason for this is that a younger age group can be tested and the results are more reliable.

POLIOMYELITIS

The programme to immunise all children as quickly as possible against poliomyelitis was carried on throughout the year. A total of 347,131 primary, 329,675 second and 247,396 booster doses were given. This programme has inevitably led to a curtailment of normal work, and all of us in this service are looking forward to the end of the current year when (it is hoped) the mass immunisation of all the children and adolescents will have been completed.

CHILD HEALTH CLINICS

A new Child Health Clinic was established during the year at Palmerston North, the existing ones being at Auckland, Wellington, Christchurch, Whangarei, and Hamilton. In some areas, private practitioners still seem unwilling to refer children to these clinics, but judging by the increasing numbers of children that attend, it would seem that most doctors are appreciative of the services available, as children are never referred without consultation with the private doctor. Figures available show that the *primary* referral is from private doctors in 63.5 per cent of cases.

The clinics form the great meeting ground of the medical, educational, psychological, and welfare organisations concerned with the child and as such enable all aspects of the child's make-up to be brought under consideration.

POST-PRIMARY SCHOOLS

It was still not possible to provide routine medical inspections of children in post-primary schools. Poliomyelitis immunisation and BCG vaccination programmes however were carried out, and advice and assistance were provided where specially asked for.

The lack of service to the post-primary schools is regrettable. Some blame for this must be attributed to the poliomyelitis immunisation programme but even without this, difficulties would have been encountered owing to lack of staff. It was hoped that the discontinuance of the examination of students for teachers' training colleges and dental nursing would have enabled the time saved to be applied to post-primary work, but this was not possible.

DAY NURSERIES

During the year the Child Welfare Amendment Act 1958 was passed. Under this Act the Child Welfare Division became responsible for the registration, inspection, and control of the day nurseries themselves. At

the same time, the Health Act was amended to enable medical officers to enter day nurseries and examine children therein.

GENERAL

The existence of the child hygiene service has sometimes been criticised on the grounds that now that medical treatment is freely available to all virtually without cost, there is no need for a service of this kind. Ideally this is so, but in practice, as this report shows, some service of the kind is necessary to ensure that children do really receive the treatment they need. Only a service of this kind can provide a continuous record of the state of health of the child community, and it is not without satisfaction to those working in the field that they have contributed to some extent towards the improvement revealed by comparison of the statistics of 10 years ago with those of today.

I would like to take this opportunity of expressing appreciation of the hard work accomplished by the medical officers and nurses working for this Division, and also to family doctors, teachers and all those engaged in the welfare of children for their help and assistance.

G. A. Q. LENNANE,
Director, Division of Child Hygiene.

Table 34—School and Pre-school Children, 1958

	SCHOOL CHILDREN				PRE-SCHOOL CHILDREN (Including Plunket Examinations)			
	Europeans		Maoris		Europeans		Maoris	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Children examined	80,052	..	7,759	..	24,195	..	359	..
Children found to have defects	6,453	8·06	1,228	15·83	2,271	9·39	72	20·06
Children showing evidence of defects—								
Defects in general condition—								
Fair	48	0·06	20	0·26	16	0·07	1	0·28
Bad	97	0·12	32	0·41	44	0·18	6	1·67
General uncleanness	18	0·02	8	0·10	1	..	..	..
Other	61	0·08	9	0·12	33	0·14	3	0·84
	224	0·28	69	0·89	94	0·39	10	2·79
Skin conditions—								
Impetigo	59	0·08	25	0·32	19	0·08	2	0·56
Scabies	2	..	37	0·48	1	..	..	..
Pediculosis	4	..	81	1·04	1	..	..	..
Eczema	90	0·11	9	0·12	103	0·43	5	1·40
Other	185	0·23	59	0·76	105	0·43	2	0·56
	340	0·42	211	2·72	229	0·94	9	2·52
Eyes—								
Refractive error untreated	1,483	1·85	90	1·16	15	0·06	..	..
Refractive error treated	381	0·48	17	0·22	13	0·05	..	..
Squint untreated	106	0·13	15	0·19	102	0·42	2	0·56
Squint treated	150	0·19	7	0·09	102	0·42	2	0·56
Other	128	0·16	22	0·28	52	0·22	1	0·28
	2,248	2·81	151	1·94	284	1·17	5	1·40
Ears—								
Otitis media with little or no impair- ment of hearing	40	0·05	115	1·48	13	0·05	3	0·83
Otitis media with impairment of hearing	97	0·12	179	2·30	16	0·07	1	0·28
Other impairment of hearing	244	0·31	68	0·88	28	0·11	2	0·56
Other	18	0·02	17	0·22	7	0·03	..	..
	399	0·50	379	4·88	64	0·26	6	1·67
Mouth, nose, and throat—								
Unhealthy tonsils	892	1·11	81	1·04	355	1·46	7	1·95
Nasal disease or defect	115	0·14	34	0·44	43	0·18	..	..
Adenoids	86	0·11	12	0·15	38	0·16	2	0·55
Untreated dental caries	617	0·77	208	2·68	235	0·97	27	7·52
Other diseases of teeth and gums	142	0·18	13	0·17	38	0·16	..	..
Other	25	0·03	9	0·12	20	0·08	2	0·56
	1,877	2·34	357	4·60	729	3·01	38	10·58
Goitre—								
Incipient	64	0·08	..	..	4	0·02	..	..
Other	21	0·03	..	..	7	0·03	..	..
	85	0·11	..	..	11	0·05	..	..
Speech, nervous system, psychological—								
Stuttering or stammering	210	0·26	43	0·55	69	0·29	4	1·11
Enuresis	362	0·45	19	0·24	59	0·24	..	..
Other behaviour or emotional problems	112	0·14	8	0·10	78	0·32	..	..
Impaired intelligence	156	0·20	45	0·58	52	0·21	2	0·56
Epilepsy	42	0·05	9	0·12	11	0·05	..	..
Other	19	0·02	3	0·04	8	0·03	..	..
	901	1·12	127	1·63	277	1·14	6	1·67

Table 34—School and Pre-school Children, 1958—continued

	SCHOOL CHILDREN				PRE-SCHOOL CHILDREN (Including Plunket Examinations)			
	Europeans		Maoris		Europeans		Maoris	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Orthopaedic, musculo-skeletal system—								
Flat foot	117	0·15	7	0·09	89	0·36	..	..
Hallux valgus	40	0·05	2	0·03	3	0·01	..	..
Club foot	42	0·05	25	0·32	109	0·45	1	0·28
Other orthopaedic conditions of lower limb(s)	130	0·16	16	0·21	237	0·98	2	0·56
Curvature of spine	19	0·02	5	0·06	2	0·01	..	..
Residual paralysis following poliomyelitis	33	0·04	7	0·09	10	0·04	..	..
Other residual paralysis	38	0·05	5	0·06	23	0·10	1	0·28
Postural defects not due to the above conditions	52	0·06	2	0·03	14	0·06	..	..
Other	37	0·05	6	0·08	21	0·09	1	0·28
	508	0·63	75	0·97	508	2·10	5	1·40
Heart (including cardiovascular system)—								
Congenital heart disease with no impairment of function	39	0·05	7	0·09	58	0·24	1	0·28
Congenital heart disease with impairment of function	18	0·02	4	0·05	17	0·07	..	..
Rheumatic heart disease with no impairment of function	6	0·01	14	0·18	1	..	..	..
Rheumatic heart disease with impairment of function	8	0·01	4	0·05	1	..	..	..
Heart disease unspecified	28	0·03	4	0·05	60	0·25	..	..
Other heart or blood-vessel conditions, e.g., varicose veins, lower limbs	11	0·01	4	0·05	..	..	..	..
	110	0·13	37	0·47	137	0·56	1	0·28
Lungs—								
Chronic bronchitis, bronchiectasis	60	0·08	41	0·53	21	0·09	7	1·95
Effects of old infection, e.g., thickened pleura, fibrosis of lung, collapse	3	..	4	0·05	..	..	..	..
Asthma	163	0·20	15	0·19	75	0·30	1	0·28
Tuberculosis	6	0·01	6	0·08	..	..	..	..
Other	11	0·01	2	0·03	9	0·04	..	..
	243	0·30	68	0·88	105	0·43	8	2·23
Other conditions—								
Undescended testicle	211	0·26	16	0·21	72	0·30	..	..
Hernia	108	0·13	52	0·66	106	0·44	1	0·28
Other	152	0·19	16	0·21	140	0·57	1	0·28
	471	0·58	84	1·08	318	1·31	2	0·56

REPORT OF THE DIRECTOR, DIVISION OF DENTAL HYGIENE

In December 1958 the death occurred of Sir Thomas Anderson Hunter, the first Director of the Division of Dental Hygiene and the founder of the New Zealand School Dental Service. Sir Thomas Hunter's service with the Department was a short 10 years, but on the occasion of his retirement in 1930 it was stated that the value to the nation of the work which he had initiated would only be fully appreciated in the years to come. The name of Thomas Anderson Hunter would then be remembered with gratitude as the author and originator of a singularly bold and ambitious undertaking in the realm of preventive medicine and the pioneer of a movement that would inevitably prove a tremendous factor in the health and welfare of the children of New Zealand.

Twenty-eight years have now elapsed since Sir Thomas Hunter's retirement and the forecast made at that time has proved to be correct, but even so, many today have little knowledge of the origin and development of New Zealand's widespread National Dental Service.

In 1920 when Sir Thomas advocated the employment of specially trained young women who would provide dental treatment for children there were those who believed that the dental nurse system would constitute a grave danger to the health of the public and to the prestige of the dental profession. Sir Thomas however was convinced in his own mind that his ideas were sound and, having obtained the official support of the New Zealand Dental Association, he commenced training the first group of student dental nurses. This was in 1921 and from then on he was able to apply the principles he believed in and develop the School Dental Service as he had planned. It was his emphatic belief and intention that a dental service should strive to prevent rather than treat dental disease alone, that it should commence with the pre-school child, be conservative in nature and organised on a regular treatment plan, and, most important of all, that dental health education should be a basic and continuing part of the dental health programme. These principles, idealistic at the time, have been adhered to in the New Zealand service for close on 40 years and year by year have become more generally accepted by overseas countries as the essential elements of a sound public health dental service.

The initial staff, composed of the 29 school dental nurses who graduated in Wellington in 1923, has now grown to one of 830 nurses treating a total of more than 340,000 children from 2,464 schools. School dental clinics are to be found from the far north to the far south and the early doubts regarding the wisdom of the system which were evident in New Zealand as well as in countries overseas have disappeared and young women trained on the New Zealand school dental nurse pattern are now playing an important part in providing dental care for young children in an increasing number of countries.

The world picture reveals a shortage of university trained dentists in practically all countries, many of which face a great volume of dental disease and at the same time a growing consciousness on the part of their people for the need for dental care. In the light of this, I am sure that sooner or later all progressive countries will make use of young women, trained as dental auxiliaries, as a logical and practical means of aiding the dental profession in providing dental care for the many who need it.

STAFF

On 31 March 1959 the professional and technical staff of the Dental Division, excluding those seconded to other services and foreign students studying in this country, numbered 1,380, comprising 66 Dental Officers, 4 Matrons, 31 Dental Nurse Inspectors and Dental Tutor Sisters, 830 school dental nurses (of whom 55 are part time), 420 student dental nurses and 29 dental attendants.

While the increasing number of school dental nurses available to provide dental care for an increasing school population is satisfactory, there is an urgent need for a corresponding increase in the strength of the dental officer administrative staff in dental districts and in the strength of the dental officer instructional staff in the schools for dental nurses. The problem is most evident in the schools, where of a total of 17 dental officers on the instructional staff only six are permanent officers, all others being dental bursars bound to the Department for a limited specified period after graduation by the terms of their bursary agreement.

Considerable improvement in the administration of the Division's Head Office activities was made possible during the year with the appointment of a third Assistant Director – Mr J. G. Espie, formerly Principal of the School for Dental Nurses, Wellington.

The School Dental Service is criticised from time to time on the grounds that young women who are trained as school dental nurses resign to be married after a short period of service. This is often so, but as has been pointed out in previous reports, many school dental nurses who marry continue in the service after marriage and others who have married and resign rejoin the service at a later date when their children require less direct supervisory maternal care. At 31 March 1959 the average years of service given after graduation by all those school dental nurses who completed their training between the years 1923 and 1933 – a total of 257 – was $11\frac{8}{12}$ years; while for the period 1923–1939 inclusive, 442 graduates had already given an average of $10\frac{2}{12}$ years' service after completion of training.

It is difficult to foretell whether those school dental nurses who have trained in the post-war years or who are completing training at the present time will give on the average a similar term of service, but from experience to date there is no question that from the economic point of view an adequate return of service is given the State for the money expended on the training of school dental nurses.

DENTAL PRACTITIONER SERVICE

Free dental care for children from the time treatment ceases at a school clinic up to 16 years of age has been available since 1947 and is still being provided, partly by salaried dental officers working in the Department's special clinics, but in the main by private practitioners treating children on a fee-for-service basis.

(a) Treatment by Salaried Dental Officers of the Department

At 31 March 1959 the number of children receiving treatment from salaried dental officers was 12,412. Although this number is small when compared with the 165,956 treated by private dental practitioners under social security (dental benefits), the salaried officers play an important part in the National Dental Service. They carry out advanced and special treatment for many children referred to them from dental nurse

clinics, serve in difficult and remote areas in New Zealand and comprise most of the staff of the mental hospitals' dental service. Dental officers from the Division of Dental Hygiene are also seconded to Western Samoa and the Cook Islands, and by arrangement with the Air Department a dental officer visits Fiji each year to give dental treatment to New Zealand personnel and their families at Nandi and Lauthala Bay.

Up to the present time the existence of this salaried service with its wide range of activities has been almost wholly dependent upon the supply of graduates from the Otago University Dental School who have held Health Department bursaries and are therefore bound to serve the State for two or three years. The attractions of private practice are such that of 108 young dentists who in the past 15 years, 1944 to 1959, completed the required bursary service with the Department or a hospital board, only five have remained in the Division on a permanent basis. This continuing loss, together with a very marked decrease in the number of students accepting dental bursaries, may jeopardise the very existence of the salaried service in the not too distant future.

The following are the statistics for the year under review for clinics in the Division of Dental Hygiene controlled by dental officers (figures for the previous year in parentheses):

Table 35

Number of dental officers	30	(23)
Number of dental attendants	29	(25)
Number of treatment centres (including sub-bases)	28	(27)
Number of schools under treatment	37	(73)
Number of children under regular treatment	12,412	(8,272)
Operative dental treatment—		
Total number of fillings	50,304	(40,937)
Total number of teeth extracted	3,620	(3,503)
Total number of operations	78,405	(66,601)

(b) Treatment by Private Dental Practitioners

Statistics relating to treatment rendered under the Social Security (Dental Benefit Regulations) for the year under review are as follows (figures for the previous year in parentheses):

Table 36

Number of children enrolled for general dental benefits as at 31 March 1959	165,956	(169,482)
Number of children who ceased to be enrolled for general dental benefits on attaining 16 years of age	25,358	(28,640)
Total amount paid private dental practitioners for treatment rendered under general dental benefits	£929,694	(£922,045)
Number of completed treatments in respect of which the above sum was paid	270,730	(272,020)
Average cost per completed treatment for general dental benefits	£3 8s. 8d.	(£3 7s. 9d.)

Of the 825 private dental practitioners holding annual practising certificates as at 31 March 1959, 591 had contracted to provide treatment under the dental benefits system. This latter figure does not include dentists who are employed by contracting dentists as assistants, therefore the figure does not represent the total number of dentists engaged in providing dental benefit treatment.

The aim of the dental benefit plan is to give a complete treatment, at approximately six-monthly intervals, to every child enrolled for general dental benefits.

The cost of each of these treatments has risen by 1·4 per cent from £3 7s. 9d. in 1958 to £3 8s. 8d. in 1959.

The total cost of all dental benefits per year since 1947 is shown in the table below:

Table 37

Year Ending 31 March				Total Patients Enrolled for General Dental Benefits	Amount Paid for Dental Benefits
					£
1947	..	..	..	} 43,231	105,159
1948	..	..	..
1949	..	..	..		266,373
1950	..	..	..		322,730
1951	..	..	..	107,529	383,752
1952	..	..	..	124,718	472,935
1953	..	..	..	160,694	545,003
1954	..	..	..	168,496	663,950
1955	..	..	..	162,699	712,175
1956	..	..	..	172,379	799,320
1957	..	..	..	172,724	806,311
1958	..	..	..	169,482	922,045
1959	..	..	..	165,956	939,758

SCHOOL DENTAL NURSE SERVICE

The following are the statistics relating to the work of the School Dental Nurse Service (including the Schools for Dental Nurses) for the year ended 31 March 1959 (previous year's figures are in parentheses):

Table 38

Number of school dental nurses .. .. .	..	..	830	(775)
Total number of treatment centres including sub-bases	..	..	852	(808)
Number of schools under treatment .. .. .	..	..	2,464	(2,404)
Number of children under regular treatment	..	..	344,546	(330,463)
Operative dental treatment—				
Total number of fillings .. .. .	..	..	1,749,764	(1,624,462)
Number of carious permanent teeth extracted	..	..	779	..
Number of carious deciduous teeth extracted	..	..	69,137	..
Total number of carious teeth extracted	..	..	69,916	(86,735)
Total number of operations .. .. .	..	..	2,738,180	(2,559,577)

The total number of fillings amounting to 1,749,764 is to be contrasted with 69,916 teeth removed as unsavable.

This latter figure, together with 1,808 teeth extracted for School Dental Service patients by contracting dentists under dental benefits, represents a ratio of 4·1 teeth extracted because unsavable to every 100 fillings. Another feature of the year's work was that during the 12 months under review there was only one unsavable permanent tooth extracted for each 267 children under treatment—an indication of the thorough standard of treatment rendered in the School Dental Service.

The number of children receiving treatment at school dental clinics shows a rise of 14,083 on the previous year's figure, and it is pleasing to find included in our 344,546 patients 61,498 pre-school children between two and a half and five years of age. This, as in the case of the past few years, means that more than one in every three of all children between two and a half and five years of age in New Zealand are now receiving regular dental attention. In this matter I would again mention the continuing assistance which is given by Plunket nurses and other health workers in urging parents to see that pre-school children receive early dental treatment.

The results of a review of the dental condition of 207,525 children who received their initial dental examinations at school dental clinics during the years 1950-56 are of interest:

Table 39

Age	Number of Children Examined	Percentage With No Decayed Teeth	Average Number of Carious Teeth for All Children		
			Deciduous Teeth	Permanent Teeth	Total
		Per Cent			
2 years and under 3 years ..	27,644	63.3	1.8	..	1.8
3 years and under 4 years ..	55,470	36.9	4.0	..	4.0
4 years and under 5 years ..	44,639	17.5	6.0	..	6.0
5 years and under 6 years ..	79,772	13.8	6.7	0.1	6.8

TRAINING SCHOOLS FOR DENTAL NURSES

The number of young women applying for appointment as student dental nurses has shown a steady increase in the past few years. This, together with overall higher educational qualifications, made it possible to accept 221 students for training during the past 12 months. This figure does not include three young women from Thailand, two from Hong Kong, two from North Borneo, one from Sarawak and one from Rarotonga, all receiving training by arrangement with their respective Governments.

The planned development of the School Dental Service is based on an intake of 220 students per year which, allowing a 10 per cent loss during training, is expected to provide the required 200 graduates yearly. This intake of 220 students has only become possible with the facilities for training now available in Wellington, Auckland, and Christchurch. The new school in course of erection in Christchurch is expected to be completed later this year; in the meanwhile training is being carried out under considerable difficulty in temporary accommodation in three separate buildings.

Each of the three schools for dental nurses functions both as a training school and as an institution providing dental care for children. In the year under review the three schools treated 14,881 children from 72 State and private schools, but even so, this number of children is much below the number that could be treated with the excellent facilities available. Chiefly because the schools for dental nurses are located in

the centres of their respective cities, attendance by children often involves considerable travelling and the necessity for the young to be accompanied by a parent or teacher. This has led to frequent requests that the Department provide transport and organise attendance from contributing schools on a group basis as is the practice with similar institutions overseas.

REFRESHER COURSES

One refresher course was organised and held at the Wellington school in May 1958. This was attended by 20 nurses, all of whom had graduated from the Wellington school 10 years or more previously. Another course will be held in May of 1959, and at least one in each subsequent year as part of the programme, to give all school dental nurse staff a short refresher course at the end of each five or six years field service.

HEALTH EDUCATION

The education of school children in the home care of their teeth continues to be a challenge to the school dental nurse.

It is recognised that if teaching is to be effective, facts must be presented in an interesting way, and consequently during the last year every endeavour has been made by the Dental Health Education staff to produce a wide variety of lessons for use with the various age groups.

The two Tutor Sisters engaged in health education have also held tutorials and handwork classes for dental nurses in the field, as well as classes for student dental nurses in training, with the object of ensuring that every nurse is thoroughly versed in the use of health education material and well equipped to teach.

Much assistance in organising health education lessons for school children continues to be given by class teachers, and particular mention should be made of those headmasters who cooperate with the dental nurse in maintaining reasonable control over the eating of sweets in the school precincts during the school day.

Apart from many other activities carried out in the field of dental health education during the year, school dental nurses gave more than 6,900 lectures and addresses to parents and children and prepared 230 health exhibits and health stalls at schools and public functions. With the improving staff position in the field I expect even greater activity in the coming year.

COLOMBO PLAN AND WORLD HEALTH ORGANISATION

The Division has continued to give assistance when sought, in the developing of dental services in South-East Asia and the Western Pacific, and in this connection was represented at a World Health Organisation Dental Seminar held in Adelaide in February 1959 to consider problems affecting these regions. It is worthy of note that in June of last year Mr J. Ll. Saunders, former Director of this Division, was elected Chairman of the Expert Committee on Auxiliary Dental Personnel which met at WHO Headquarters, Geneva, and that at the invitation of the

Australian Government Mr J. Francon Williams, Assistant Director, visited Papua and New Guinea to report on the establishment of a school dental service in the Territory.

Mr F. B. Rice, former Assistant Director of this Division, completed a three and one half years' tour of duty in Ceylon in July 1958. During this period he planned and successfully established a training school for dental nurses in Colombo, assisted in the organisation of a School Dental Service, made a survey of Ceylon's dental services and undertook a dental caries epidemiological study covering all provinces in the island. In September of last year he severed his connection with this Division to take appointment as Chief Dental Officer, World Health Organisation Headquarters, Geneva.

Among the visiting Colombo Plan and WHO fellows who were attached to the Division of Dental Hygiene for varying periods during the past twelve months were Mr L. A. Salgado, School for Dental Nurses, Ceylon; Dr Nibhasara Ladavalya, School of Dentistry, University of Medical Sciences, Bangkok; Dr Zoelkarnain Ali, School for Dental Nurses, Djakarta; Dr Chen Cheng-yang, Taiwan; and Professor Mitsu-haru Takeuchi, Tokyo Dental College, Japan.

Mrs Tan Hwie Kiat and Miss Azinar Asikin from the School Dental Service, Indonesia, are at present in New Zealand studying dental administration and dental health education respectively, and student dental nurses from Thailand, Sarawak, North Borneo, and Hong Kong are in training in the Auckland and Wellington Schools.

New Zealand has also continued to assist the establishment of dental services in the Colombo Plan area by providing trained New Zealand school dental nurse staff. At present two tutor sisters are attached to the School for Dental Nurses, Colombo, and two are working in the Brunei School Service. A further two tutor sisters recently returned to New Zealand after two years in the North Borneo School Service.

DENTAL BURSARIES

In 1945 the value of the dental bursary provided by the Department was increased and it now provides tuition fees and £80 bursary and £50 boarding allowance if living away from home. In spite of this the number of bursaries taken by students has fallen steadily over the past five years.

Dental bursaries awarded, renewed, suspended, and terminated over the period of the last six years are as follows:

Table 40

—				New Bursaries Awarded	Previous Bursaries Renewed	Bursaries Suspended Temporarily	Bursaries Terminated	Total Bursaries in Effect 31 March
1954	..	..	..	27	49	17	1	93
1955	..	..	..	14	63	15	3	92
1956	..	..	..	13	77	6	1	96
1957	..	..	..	10	55	2	2	67
1958	..	..	..	9	38	7	5	54
1959	..	..	..	5	35	2	2	42

DENTISTS REGISTER

During the 12 months ending 30 September 1958 the number of dentists on the register increased from 1,018 to 1,057. The additions to and deletions from the Register were as below:

Table 41

At 30 September 1957—				
Number of Dentists on Register	..	..	..	1,018
<i>Additions:</i>				
Dentists with New Zealand qualification	..	..	..	44
Dentists with overseas qualification	..	..	..	7
				<hr/> 51
<i>Deletions:</i>				
Names removed by death, at own request, etc.			..	12
At 30 September 1958—				
Number of Dentists on Register	..	..	..	1,057

ACKNOWLEDGMENTS

I wish to acknowledge the assistance and cooperation that has been accorded this Division by the dental profession, school teachers, education boards, dental clinic committees and other Divisions of the Department. In particular I thank all those within the Dental Service itself who by their enthusiasm and loyal service have made this year's record of achievement possible.

J. BRUCE BIBBY,
Director,
Division of Dental Hygiene.

REPORT OF THE DIRECTOR, DIVISION OF HEALTH EDUCATION AND MATERNAL WELFARE

HEALTH EDUCATION

For the greater part of the year I was overseas studying health education on a World Health Organisation Fellowship, and on returning in October began to take over the various activities of the Division.

District health education committees have continued to be active, and in Palmerston North the committee has been strengthened by the inclusion of local authority health inspectors. Hydatids and fluoridation education were given priority in all districts, but there were also many local campaigns covering a wide range of health matters including agricultural chemicals, sanitation, rats, fly prevention, food handling, accidents in the home, pasteurisation, and supporting health education for the mobile X-ray unit.

Campaigning against hydatids disease has continued at national level in close cooperation with the Department of Agriculture, Federated Farmers, and other interested bodies. The outcome of this combined effort has been the formation of National Hydatid Council, on which Dr Turbott is the Health Department's representative.

The Head Office health education committee has maintained health advertisements in most daily newspapers and in many periodicals, and these are frequently arranged to coincide with and so reinforce distinct campaigns on a particular subject. Our railway advertising mentioned in last year's report, newspaper pulls (270,000), and of course our film library have also been maintained.

Several new publications were produced but much of our budget is now spent maintaining stocks of booklets and pamphlets that have proved their worth and for which there is a steady demand. For economy reasons we deferred a campaign against cigarette smoking, a national campaign supporting fluoridation and a campaign directed at the safe use of agricultural chemicals. For the same reasons we deferred production of the film *War on the Farm* which was designed to impress farmers and orchardists with the need for extreme caution in the handling of insecticides. It is hoped to produce this film in the coming year as it is urgently needed and no suitable film is available from overseas sources.

Bulletin *Health* has been published quarterly as in the past (circulation remains at over 50,000) and Dr Turbott has continued his weekly radio talks over the YA and ZB networks. In addition to numerous newspaper articles, produced by requests for individual newspapers by head office and district offices, there were 70 general newspaper releases to main newspapers and periodicals throughout the year.

Health education activities are included in the planning at all levels throughout the work of the Department. Of particular note are various courses including the orientation course for public health nurses at the Post-graduate School for Nurses, the training course for inspectors of health, the refresher course for inspectors of health, a conference for medical officers of health devoted to a study of occupational health, and

various courses given by the dental nurse tutor sisters to classes of dental nurses in training and on the job instruction to dental nurses in the field. Lecture-demonstrations were also given at industrial safety officers' training courses organised by the National Safety Association of New Zealand.

The Department has five members serving on the Joint Committee of the Departments of Labour and Health on Occupational Health, Safety and Welfare, and our district officers have given assistance with the Joint Committee's touring exhibition which this year covered the King Country, Waikato, and Thames Valley areas. Exhibits were also given at four industrial fairs and during three "safety weeks".

The Joint Committee produced several new booklets, posters and other health education material during the year.

TRAINING OF HEALTH EDUCATION OFFICERS

As health education officers have become more established as a part of the health team in the district, we have become increasingly aware of the need for a more comprehensive training than has been given in the past. Consequently on the return of the Director from overseas planning began to put into effect a diploma course of one academic year. The course is based on the New Zealand Post-graduate School for Nurses and our students on qualification will be entitled to a diploma issued jointly by the Department of Health and the Victoria University of Wellington, as are the Post-graduate Nursing Diplomas. Candidates in the first instance will come from the ranks of our present health education officers and approval has been given for three officers to take the course in 1959. Future health education officers will be selected on the understanding that they will take the course some time after appointment, and preference will be given to those willing and best qualified to do so.

MATERNAL WELFARE

Tables 42, 43, and 44 are presented in the same manner as previous years, but in future reports the data in table 44 will be compiled as rates so that comparisons can readily be made.

The European maternal mortality rate (excluding illegal abortion) of 0.35 per 1,000 live births is a considerable improvement on last year's figure, but as stated in last year's report a small numerical rise or fall in the deaths can make a striking difference to our rates. This year it acted in our favour by almost halving the European maternal mortality rate although there were in fact only 15 less deaths than last year. The Maori maternal mortality rate has remained approximately the same and here again the absolute number of deaths is small (nine).

It will be noted that the term "illegal abortion" has been used to replace "septic abortion" in the above tables because sepsis need not necessarily occur in all cases, and it is sobering to note that each year we lose several mothers, particularly European mothers, from this cause. There were no Maori mothers lost from illegal abortion over the past two years but in 1957 two out of the 35 European deaths and in 1958 three out of the 22 European deaths were reported as due to abortion "induced for other than medical reasons."

Table 42—Number of Births per Annum, Birth Rate, Infant Mortality and Maternal Mortality Rates 1954-58

—		1954	1955	1956	1957	1958
Number of live births per annum	E.	48,431	49,869	50,430	51,852	53,774
	M.	5,700	5,807	6,163	6,632	6,861
	C.	54,131	55,676	56,593	58,484	60,635
Live birth rate	E.	24.63	24.86	24.67	24.82	25.16
	M.	44.37	43.64	44.64	46.29	46.24
	C.	25.84	26.03	25.93	26.20	26.53
Infant mortality rate per 1,000 live births	E.	19.99	20.09	19.39	19.98	19.40
	M.	58.60	62.51	54.36	57.90	54.37
	C.	24.05	24.52	23.20	24.28	23.35
Still-birth rate per 1,000 live births	E.	17.69	15.71	16.73	15.83	15.00
	M.	19.10	16.10	19.72	15.15	16.20
	C.	17.84	15.75	17.06	15.75	15.14
Neo-natal death rate per 1,000 live births	E.	14.33	14.14	13.34	13.89	13.61
	M.	20.00	19.63	19.96	20.81	22.01
	C.	14.93	14.71	14.07	14.67	14.56
Still-birth rate and neo-natal death rate combined per 1,000 total births	E.	32.02	29.62	29.85	29.50	28.41
	M.	38.72	35.41	39.29	35.64	37.85
	C.	32.50	30.23	30.89	30.19	29.48
Maternal mortality rate (including illegal abortion) per 1,000 live births	E.	0.52	0.44	0.40	0.67	0.41
	M.	1.58	2.07	1.46	1.36	1.31
	C.	0.63	0.61	0.51	0.75	0.51
Maternal mortality rate (excluding illegal abortion) per 1,000 live births	E.	0.43	0.36	0.32	0.62	0.35
	M.	1.23	1.89	1.30	1.36	1.31
	C.	0.52	0.52	0.42	0.70	0.46

Table 43—Maternal Deaths, 1957 and 1958

Causes of Death	Number of Deaths		Rate Per 1,000 Live Births	
	1957	1958	1957	1958
A. EUROPEAN				
642. Toxaemia of pregnancy—				
642.1 Renal disease arising during pregnancy ..	1	..	0·02	..
642.2 Pre-eclampsia of pregnancy .. ..	..	5	..	0·09
642.3 Eclampsia of pregnancy	1	2	0·02	0·04
642.5 Other	5	1	0·10	..
	7	8	0·13	0·15
643. Placenta praevia .. ..	..	1	..	0·02
644. Other haemorrhage of pregnancy	1	2	0·02	0·04
645. Ectopic pregnancy	1	..	0·02	..
648. Other complications arising from pregnancy—				
648.1 Hydatidiform mole	1	..	0·02	..
648.2 Placental abnormalities not classified elsewhere	1	..	0·02	..
648.3 Other	1	..	0·02	..
	3	..	0·06	..
650. Abortion without mention of sepsis or toxaemia—				
650.0 Spontaneous or unspecified	1	1	0·02	0·02
650.2 Induced for other than medical reasons ..	..	2	..	0·04
	1	3	0·02	0·06
651. Abortion with sepsis—				
651.0 Spontaneous or unspecified	1	..	0·02	..
651.2 Induced for other than medical reasons ..	2	1	0·04	0·02
	3	1	0·06	0·02
652. Abortion with toxaemia without mention of sepsis—				
652.1 Induced for medical reasons	1	..	0·02	..
670. Delivery complicated by placenta praevia or antepartum haemorrhage	3	1	0·05	0·02
671. Delivery complicated by retained placenta ..	2	..	0·04	..
672. Delivery complicated by other postpartum haemorrhage	2	1	0·04	0·02
675. Delivery complicated by prolonged labour ..	2	..	0·04	..
677. Delivery with other trauma	3	2	0·06	0·04
678. Delivery with other complications of childbirth ..	1	..	0·02	..
681. Sepsis of childbirth and the puerperium ..	1	1	0·02	0·02
682. Puerperal phlebitis and thrombosis .. ..	..	1	..	0·02
684. Puerperal pulmonary embolism .. ..	..	1	..	0·02

Table 43—Maternal Deaths, 1957 and 1958—continued

Causes of Death	Number of Deaths		Rate Per 1,000 Live Births	
	1957	1958	1957	1958
A. EUROPEAN—continued				
686. Puerperal toxæmia	2	..	0·04	..
688. Other and unspecified complications of the puerperium—				
688.2 Sudden death from unknown cause ..	1	..	0·02	..
689. Mastitis and other disorders of lactation ..	1	..	0·02	..
Totals, including illegal abortion ..	35	22	0·67	0·41
Totals, excluding illegal abortion ..	33	19	0·62	0·35
B. MAORIS				
642 Toxæmia of pregnancy—				
642.1 Renal disease arising during pregnancy ..	1	..	0·15	..
642.2 Pre-eclampsia of pregnancy .. .. .	..	1	..	0·15
	1	1	0·15	0·15
644 Haemorrhage of pregnancy .. .. .	..	2	..	0·29
645 Ectopic pregnancy—				
645.0 Without mention of sepsis .. .. .	..	1	..	0·15
650 Abortion without mention of sepsis or toxæmia—				
650.0 Spontaneous or unspecified	1	1	0·15	0·15
651 Abortion with sepsis—				
651.0 Spontaneous or unspecified .. .. .	..	1	..	0·15
670 Delivery complicated by placenta prævia or antepartum haemorrhage	1	..	0·15	..
671 Delivery complicated by retained placenta ..	1	1	0·15	0·15
672 Delivery complicated by other postpartum haemorrhage	3	..	0·46	..
677 Delivery with other trauma .. .. .	..	1	..	0·15
682 Puerperal phlebitis and thrombosis	1	..	0·15	..
689 Mastitis and other disorders of lactation ..	1	1	0·15	0·15
Totals, including illegal abortion ..	9	9	1·36	1·31
Totals, excluding illegal abortion ..	9	9	1·36	1·31

Table 44—Statistics of Maternity Services and Cases, 1958

	Private Hospitals	Public Hospitals	St. Helens Hospitals	Alexandra Home, Wellington	Totals
Number of hospitals	41	157	3	1	202
Number of beds	392	2,308	147	19	2,866
Admissions for ante-natal treatment	324	4,099	311	15	4,749
Admission for delivery	8,466	4,5654	3,291	479	57,890
Confined at full term	7,915	42,887	3,015	447	54,264
Confined between seventh month and full term	484	2,311	249	16	3,060
Total confinements	8,399	45,198	3,264	463	57,324
Abortions	12	68	..	..	80
Instrumental delivery	974	3,457	216	23	4,670
Inductions—					
Medical	572	3,175	193	59	3,999
Surgical	433	2,193	96	26	2,748
Combined	181	1,231	89	19	1,520
Manual removal of placenta	95	616	51	3	765
Caesarean section	98	838	78	10	1,024
Haemorrhage—					
Accidental	23	425	44	2	494
Unavoidable (placenta praevia)	16	327	24	..	367
Post-partum	95	1,965	205	9	2,274
Eclampsia	6	55	1	..	62
Deaths of infants—					
Born alive	45	473	41	5	564
Stillborn	88	693	46	7	834
Morbidity—					
Not notifiable (mild)	232	1,364	51	27	1,674
Notifiable (puerperal pyrexia)	78	1,074	127	5	1,284
Puerperal fever .. ..	..	..	..	..	58
Transferred—					
Before delivery	74	529	16	12	631
After delivery	50	503	23	2	578

Infant Mortality

Table 42 records an overall improvement in the various European rates and an improvement in the Maori infant mortality rate. Table 45 shows the steady improvement in Maori infant mortality rates in the quinquennial periods since 1939–43, and the 1954–58 figure shows a drop of 44 per cent compared with under 35 per cent for Europeans.

Table 45—Quinquennial Average Infant Mortality Rates, 1939–58

Quinquennium	European and Maoris	European	Maoris
1939–43	38.73	30.24	103.00
1944–48	32.55	26.24	83.13
1949–53	27.85	22.24	76.25
1953–58	23.89	19.77	57.53

The Maori neo-natal mortality (deaths under one month of age) has until recent years coincided closely with the European figure but as may be seen in table 46 (and in the 1958 figures, table 42) it is now half as high again as the European figure. On the other hand the Maori mortality for the age group one month and under 12 months is over six times as high as the European. It is in this age group that most progress has been made in reducing the European infant mortality rate over the years, and a continuing application of comparable methods to the Maori community can be expected to yield similar results. Respiratory, gastric, and intestinal diseases take the greatest toll of Maori infant life in the one to 12 months age group. These are affected by such factors as the parents' understanding and practice of good personal and community hygiene, housing and sanitary conditions, medical and nursing care, etc.

Table 46—Quinquennial Average Death Rates, Under 1 Month and 1 to 12 Months 1939–58

Period	Deaths Under 1 Month per 1,000 Live Births		Deaths 1–12 Months per 1,000 Live Births	
	European	Maoris	European	Maoris
1939–43	20·78	24·23	9·46	78·76
1944–48	18·63	23·60	7·61	59·53
1949–53	15·84	25·79	6·40	50·45
1954–58	13·88	20·45	5·89	37·10

During the year the Medical Statistician, Mr Cedric Gardiner, completed his report on the survey made of Maori infant mortality in five health districts.

Circumstances surrounding the death of Maori infants in these areas for the 12 month period June 1954–July 1955 were compared with control groups of other Maori births and of European births.

Substandard housing with associated lack of amenities played a part in the Maori infant mortality figures, but equally important were the findings of the section of the report dealing with personal and medical data. Thus it was found that Maori mothers generally had less ante-natal attention than European mothers, and the group of Maori mothers whose infants had died showed the highest proportion of failure to have any ante-natal consultation whatever. Also important is the fact that in 26 per cent of the cases of Maori infant deaths the mother had been delivered at home or at some place other than hospital, as compared with 15 per cent of all Maori births and less than 1 per cent of European births. Similarly the mothers whose infants died spent less time in bed following confinement and (allowing for infant deaths) breast fed their infants considerably less than mothers in the other two groups.

The findings of the report suggest their own remedies and will be valuable guides to field workers in their continuing campaign to improve the conditions of our Maori people.

Staphylococcal Infections

Maternity hospitals have continued and intensified their efforts against staphylococcal infections with some satisfactory results. Research in this field is covered in the report of the Director of the National Health Institute, from which valuable information has come during the years.

Table 47—*Infant Mortality and Neo-natal Mortality for Selected Countries (1957) Rates per 1,000 Live Births*

	Infant Mortality Rate	Neo-natal Mortality Rate
Sweden	17·1	13·3
Netherlands	17·2	11·9
NEW ZEALAND (European) ..	20·0	13·9
Australia	21·4	15·4
Switzerland	22·9	16·6
England and Wales	23·0	16·5
Denmark	23·4	..
*United States of America ..	26·3	18·9
Finland	27·9	16·6
Scotland	28·6	19·6
Northern Ireland	28·9	..
Ireland	33·1	22
Israel	33·4	17·9
Czechoslovakia	33·4	..
France	33·8	19·8
Belgium	35·3	..
Germany (Federal Republic) ..	36·3	24·4
Japan	40·1	..
Austria	44·2	27·4
Greece	44·3	..
Germany (Democratic Republic) ..	45·4	..
Spain	47·7	..
Italy	49·8	..
NEW ZEALAND (Maori) ..	57·9	20·8
Hungary	63·1	31·8
Ceylon	67·5	..
Poland	76·9	32·1
Portugal	88·0	29·0
Uruguay	90·2	38·0
Yugoslavia	101·7	..
Chile	117·7	37·3

*Includes coloured population.

Comparison with Other Countries

Table 47 gives infant mortality and neo-natal mortality rates for selected countries and shows that although New Zealand compares favourably with comparable countries we no longer “lead the world.”

C. N. DEREK TAYLOR,
Director, Division of Health Education
and Maternal Welfare.

REPORT OF THE DIRECTOR, DIVISION OF TUBERCULOSIS

The control of tuberculosis based on the integration of hospital clinical services and departmental preventive services continued along the lines laid down in previous years. Case finding and diagnosis, the provision of adequate treatment, the continuing follow up of registered cases and contacts are the mainstays of the programme.

NOTIFICATIONS

Morbidity

The steady fall in new cases notified although not spectacular has been continued. The total of 1,698 comprised 1,425 respiratory and 273 non-respiratory cases. Members of the Maori race continue to show a high incidence of new disease, approximately eight times that of Europeans. The relative rates per 10,000 population for respiratory tuberculosis are 33.6 for Maoris and 4.3 for Europeans.

Mortality

The mortality rate continues to fall. Mortality from all types of disease for both races reached the lowest figure recorded with only 202 deaths, a rate of 8.8 per 100,000 population. European mortality was 6.5 and Maori mortality 41.8 per 100,000 population.

Tuberculosis Register

The number of cases on the Tuberculosis Register appears to have reached stability at 13,341 for 1958. This is the first year since the register has been kept that it has not shown an annual increase.

The success of modern therapeutic methods is shown in the register in several ways. First there has been a steady decrease, more accelerated over the last five years, in the number of infectious cases registered. Known infectious cases are now only one-third the number of a decade ago. Correspondingly there has been a steady increase in the numbers classified as sputum negative. Also it will be noted that there has been a satisfactory decrease over the years in those cases which are clinically classified as deteriorating and stationary.

Mass Radiography

No addition has been made to the number of mass X-ray units operating, there still being nine separate units giving a reasonably complete coverage for the whole of the country. For the year a total of 234,548 persons was X-rayed. This is a slight decrease in the numbers X-rayed last year but is accounted for by the more selective use of the units. This is shown by the increased number of active cases discovered (414) which represents 1.76 active cases per 1,000 persons examined and accounts for 24.38 per cent of new notifications for the year.

In cooperation with the Dominion X-ray and Radium Laboratory a code of safe procedure for the operation of mass X-ray units was issued during the year to the licensees of all units.

Table 48—Results of Mass X-ray Examinations

Year	Number Examined	Tuberculosis				Other Lung Conditions	Cardio Vascular Disease
		Healed	Inactive	Active	Active Cases Per 1,000 Examined		
1955 ..	126,377	1,619	335	258	2.04	1,357	750
1956 ..	202,672	2,391	550	359	1.77	1,837	643
1957 ..	242,332	2,248	716	380	1.56	1,837	734
1958 ..	234,548	1,761	753	414	1.76	2,785	738

INSTITUTIONAL ACCOMMODATION

With modern treatment, beds available for the reception of tuberculosis cases are more than adequate. This is reflected particularly in the lessened use now being made of sanatorium beds throughout the country.

It has been found possible to divert some of the accommodation at Cashmere Sanatorium for the reception of long stay medical cases thus lessening the pressure on general hospital accommodation.

The thanks of the Division are due to the New Zealand Federation of Tuberculosis Associations and to the individual associations themselves for their assistance; and to hospital chest physicians who in their clinics are working towards the cure and eradication of this disease.

G. O. L. DEMPSTER,
Director, Division of Tuberculosis.

Table 49—Results of Mantoux Testing

Year		Age Groups (Years)												Total B.C.G. Vaccina- tions		
		0-4		5-9		10-14		15-19		20-24		25-34			35+	
		Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive	Tested	Positive		Tested	Positive
1955	..	1,834	66 (3.6%)	2,092	228 (10.8%)	19,962	2,786 (13.9%)	5,568	1,467 (26.4%)	886	308 (34.8%)	1,110	603 (54.3%)	636	471 (73.9%)	26,051
1956	..	2,097	109 (5.2%)	1,933	195 (10.1%)	15,449	1,806 (11.7%)	3,461	677 (19.6%)	949	354 (37.3%)	1,039	562 (54%)	629	399 (63.6%)	20,460
1957	..	2,242	119 (5.3%)	1,933	262 (11.4%)	22,126	2,391 (10.8%)	5,424	1,304 (24%)	1,303	425 (32.5%)	1,121	507 (45.3%)	391	224 (57.4%)	29,287
1958	..	1,885	87 (4.6%)	1,794	174 (9.7%)	15,238	1,538 (10.0%)	2,813	837 (29.7%)	1,191	684 (57.4%)	708	353 (50.0%)	293	172 (58.8%)	19,295

Table 50—Morbidity: Notification of New Cases of Tuberculosis During Statistical Year: Incidence of Type of Disease by Race and Sex With Number and Rate Per 10,000 Estimated Mean Population

Year		Respiratory						Non-respiratory						All Types		
		European			Maori			European			Maori			Both Races		
		M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1954	..	645	433	1,078	280	293	573	84	90	174	49	35	84	1,058	851	1,909
		6.5	4.4	5.5	42.2	46.3	44.2	0.8	0.9	0.9	7.4	5.5	6.4	10.0	8.1	9.5
1955	..	660	479	1,139	234	267	501	87	102	189	42	46	88	1,023	894	1,917
		6.7	4.9	5.8	35.8	41.7	38.8	0.87	1.0	0.96	6.4	7.2	6.8	9.8	8.5	9.1
1956	..	647	392	1,039	245	283	528	65	84	149	42	48	90	999	807	1,806
		6.3	3.9	5.1	39.6	42.0	38.2	0.63	0.83	0.73	6.0	7.1	6.5	9.1	7.4	8.4
1957	..	608	402	1,010	265	257	522	65	71	136	54	59	113	992	787	1,781
		5.8	3.9	4.7	36.3	36.7	36.4	0.62	0.68	0.65	7.4	8.4	7.9	8.7	7.1	8.0
1958	..	553	375	928	270	227	497	80	88	168	51	54	105	952	746	1,698
		5.2	3.5	4.3	35.8	31.2	33.6	0.74	0.82	0.78	6.9	7.4	7.1	8.3	6.7	7.4

Table 51—Morbidity: Cases of Tuberculosis on Tuberculosis Register at End of Statistical Year: Prevalence of Type of Disease, by Race, With Number and Rate Per 10,000 Estimated Mean Population

Year		Respiratory						Non-respiratory					
		European		Maori		Both Races		European		Maori		Both Races	
		No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1954	..	7,476	37.8	3,075	237	10,551	50.1	901	4.5	586	45.2	1,487	7.1
1955	..	7,802	39.8	3,523	273	11,325	54.1	763	3.9	340	26.3	1,103	5.3
1956	..	8,146	39.8	3,749	270	11,895	55.0	711	3.5	402	29.1	1,113	5.1
1957	..	8,395	40.0	4,055	283	12,450	55.8	615	2.9	448	31.3	1,063	4.8
1958	..	8,181	38.3	4,082	276	12,263	54.0	657	3.08	421	28.4	1,078	4.7

Table 52—Cases of Tuberculosis on Tuberculosis Register at End of Statistical Year: Prevalence of Bacteriological and Clinical States

Year			Bacteriological State				
			Sputum or Discharge		No Sputum or Discharge Available	Not Investigated	Cases on Register
			T.B.+	T.B.—			
1954	..	..	998	4,989	4,757	1,294	12,038
1955	..	..	841	5,524	4,809	1,254	12,428
1956	..	..	691	5,829	5,005	1,483	13,008
1957	..	..	583	5,707	5,580	1,643	13,513
1958	..	..	458	5,762	5,359	1,762	13,341

Year			Clinical State				
			Active		Inactive	Unknown or Believed Well	
			Deteriorating and Stationary	Improving	Quiescent and Arrested	Unknown	Believed Well
1954	..	..	1,111	2,534	7,370	630	393
1955	..	..	1,036	2,388	8,134	651	219
1956	..	..	770	2,496	8,501	758	483
1957	..	..	771	2,361	8,963	936	482
1958	..	..	572	2,278	9,026	658	807

Table 53—Mortality—Deaths from Tuberculosis During Statistical Year, Mortality by Type of Disease, by Race and Sex,
With Number and Rate Per 100,000 Estimated Mean Population

Year	Respiratory						Non-respiratory						All Types					
	European			Maori			Both Races			European			Maori			Both Races		
	M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.	
		T.			T.			T.			T.			T.			T.	
1954— Number .. Rate ..	137 13.9	44 4.5	181 9.2	34 51.8	37 59.0	71 55.3	171 16.2	81 7.8	252 12.0	16 1.6	6 0.6	22 1.1	16 24.3	13 20.7	29 22.5	32 3.0	19 1.8	51 2.4
1955— Number .. Rate ..	136 13.5	59 5.9	195 9.7	35 51.4	26 40.0	61 45.8	171 15.9	85 8.0	256 12.0	10 1.0	13 1.3	23 1.1	11 16.1	3 4.6	14 10.5	21 2.0	16 1.5	37 1.7
1956— Number .. Rate ..	96 9.3	46 4.5	142 6.9	30 42.5	32 47.4	62 44.9	126 11.5	78 7.2	204 9.3	13 1.3	6 0.6	19 0.9	5 7.1	11 16.3	16 11.6	18 1.6	17 1.6	35 1.6
1957— Number .. Rate ..	113 10.8	46 4.4	159 7.6	35 47.9	28 39.9	63 44.0	148 13.2	74 6.7	222 9.9	12 1.1	10 1.0	22 1.1	7 9.6	0 0.0	7 4.9	19 1.7	10 0.9	29 1.3
1958— Number .. Rate ..	84 7.8	41 3.9	125 5.8	26 34.4	21 28.9	47 31.7	110 9.6	62 5.5	172 7.5	7 0.7	8 0.8	15 0.7	10 13.2	5 6.9	15 10.1	17 1.5	13 1.1	30 1.3

REPORT OF THE DIRECTOR, DIVISION OF CLINICAL SERVICES

Total expenditure on health benefits this year amounted to £18,655,375. This exceeded the estimates by £78,475 and was £1,597,068 more than last year's total. Details will be found in table 59.

Each group of benefits showed an increase over last year. In all cases except one, however, there was a substantial margin on the credit side between estimated and actual expenditure. The exception was Subdivision IV—Pharmaceutical Benefits.

Pharmaceutical Benefits

The cost of this item was £5,112,343, exceeding last year's total by £645,802. This compares unfavourably with the position a year ago, when I was able to record a reduction of £106,016.

In my last year's report I warned that "it would be foolish to suggest, because there has been a break in the rising cost of pharmaceutical benefits this year, that they can be pegged at their present level". I knew that there was, in fact, every reason to expect an increase. But was the increase a reasonable one? What were its causes? And what is being done about them?

This year 12,847,773 prescriptions were passed for payment, as compared with 12,203,567 last year. This equals 5·6 prescriptions a head of population. These prescriptions cost an average of 7s. 11½d. each, the cost per head of population being £2 4s. 11d. This seems a lot, if one does not know how much modern drugs cost. A single prescription (16 capsules) for one of the commonly used antibiotics costs £3 5s. 8d. This is sufficient for about three days' treatment.

It would be difficult to understand why last year's gratifying reduction in costs had been followed by such a sharp rebound this year, if the latter were to be attributed to careless prescribing. We have certainly not relaxed our efforts to secure the cooperation of the profession. The cause must be sought elsewhere. The fact is that this increase was largely due to measures taken during the year to widen the scope of the Drug Tariff.

New Drugs "Free on the Fund"

The Drug Tariff in this country has been described as "a limited list." New drugs do not automatically become available for prescription at the cost of the fund; each one must be formally approved. If medical treatment in New Zealand is to keep abreast of modern advances the Tariff must be kept up to date, and this calls for positive action on the part of the Department. Because new drugs are protected by patent, and are always expensive, this leads inevitably to rising costs.

Practically all applications for additions to the Drug Tariff come from the drug industry itself. Full details are supplied, including reprints of the latest reports on clinical trials in different parts of the world. This material is digested in the office and circulated to members of the expert advisory committee appointed by the Minister of Health. The cost factor is brought into perspective by supplying comparative lists of all products available in particular classes, together with estimates of their unit costs. No new drug is ever included in the Tariff without the prior approval of this committee, which meets twice a year. Its

membership includes two physicians, a surgeon, a paediatrician, a university professor representing the medical school, and a general practitioner. It is safe to say that no individual in this country, and no other group, has access to so much information of this kind, or is in such a good position to assess its value.

American drug firms alone announce about four hundred new products every year. The rest of the world must come near to matching this figure. The advisory committee considers about 180 applications for new drugs every year (by and large, the *élite* of the world's research products in this field) and of this selected group three out of four are rejected. So much for the criticism, sometimes voiced by doctors, that "far too many drugs are added to the free list". These people would be the first to complain if the use of any drug which they knew to be of value was denied to them.

Three amendments to the Drug Tariff took effect during the year. Because of delays in publication, these included a considerable backlog. In consequence, the number of additions to the Tariff this year was much larger than usual. That is the principal reason for the sharp rise in costs in the past 12 months. Next year's figures should show an improvement.

New items made available this year without special restrictions totalled 81; but many of these merely represented different presentations of the same drug. Here is an analysis of the cost of 10 days' supply (or a single pack) of each of these items:

Table 54—Cost of the Principal Additions to the Drug Tariff 1958–59

Cost of 10 Days' Supply or a Single Pack				Number of Items
Under 8s.	..	..	..	19 (23·5%)
8s. to under 15s.	..	..	..	28
15s.	„	25s.	..	15
25s.	„	£2	..	9
£2	„	£3	..	5
£3	„	£5	..	3
£5 or over	..	..	..	2
Total				81

The average cost of all these items was 21s. 3d. Only 23·5 per cent cost less than the year's average for all prescriptions. In other words, over 75 per cent of the items which it was considered necessary to add to the "free list" for use at the discretion of the ordinary doctor, must have tended to raise the average cost of prescriptions.

Do Prescriptions Cost Too Much?

Prescriptions do not vary in cost in the same way as ordinary commodities. Individual drugs seldom show any tendency to increase in price from year to year. Indeed, once the patent expires, an expensive drug is apt to become a cheap one overnight. But most patents run for 16 years, and during this time, because the State here and in Great Britain foots the bill, and the volume of sales has therefore practically no relationship to changes in the market price, most firms show little tendency to reduce the price as the popularity of a drug increases.

Some firms are exceptions to this rule, but they are all too few. The existence of social security benefits has therefore interfered with a natural trade process, to the detriment of the taxpayer. A good deal of time has been spent this year (particularly by Dr Hayes) in negotiations with various drug firms about reductions in price, but with a few notable exceptions no great progress has been made.

Prescriptions rise in cost, therefore, solely as a result of progress in research, which continually adds new and expensive items to the armamentarium of the practitioner. Pharmaceutical research and development is exceedingly costly, and there can be no doubt that when properly used, these drugs, carefully selected in the manner described above, are well worth the money they cost. In the saving of lives, hospital beds and time off work (not to mention all the anguish and suffering) they pay for themselves many times over.

One impressive example may be quoted to illustrate this point.

The number of new cases of respiratory tuberculosis notified each year fell by 13·4 per cent between 1950 and 1957. In the same period the number of patient-days in hospital was reduced by no less than 26·6 per cent:

1950: 531,161 patient-days.
 1957: 390,106 patient-days.
 Reduction: 141,055 patient-days.

The disproportion between the supply of new cases, and the necessity for hospital treatment, is almost wholly attributable to improvements in drug therapy. Three drugs in particular, introduced since 1947, have effected a 'revolution' in the treatment of this disease. If, to allow for the fall in incidence, only 86 per cent of the reduction in time in hospital is credited to these new drugs, the saving in 1957 alone amounted to about £420,000.

(The reason for quoting 1957 is that it is the most recent year for which complete figures are available. The improvement has accelerated since then; savings in 1958 would be higher still.)

Is the increase in the cost of prescriptions in recent years excessive, when compared with other commodities? The following table compares the rise in cost of prescriptions over the past 10 years with the Consumers' Price Index:

Table 55—Increase in Cost of Prescriptions Compared With the Consumers' Price Index

Year Ending 31 March (1)	Average Cost per Prescription (Pence to Nearest $\frac{1}{4}$ d.) (2)	Column 2 Expressed as an Index 1950 = 100 (3)	Consumers' Price Index 1950 = 100 (4)	Prescription Costs Increasing at Same Rate as Consumers' Price Index (5)
1950	67·5	100	100	67·5
1951	69·5	103	108	72·75
1952	74·25	110	120	81·0
1953	79	117	127	85·75
1954	71·75	106	133	89·75
1955	71	105	139	93·75
1956	86	128	142	95·75
1957	87·25	129	147	99·25
1958	87·75	130	150	101·25
1959	95·5	141	158	106·75

This table shows that, while the average cost of prescriptions has risen by 41 per cent in 10 years, consumer goods generally have risen by 58 per cent. If prescriptions had increased in cost at the same rate as the Consumers' Price Index, as shown in column (5), this year they would have averaged 8s. 10 $\frac{3}{4}$ d. each, instead of 7s. 11 $\frac{1}{2}$ d., and the pharmaceutical bill would have been £600,000 higher yet. I maintain, despite what has been said above, that we pay too much for most drugs, but nevertheless they compare not unfavourably with the majority of the things we buy in this country.

Incidentally, at the request of this Department the Price Control Division is at present carrying out a review of the basis of pricing prescriptions, which may possibly result in some reduction in cost in the future.

Can the Number of Prescriptions be Reduced?

The following table deals with three inter-dependent factors: (1) The number of services per head of population; (2) the number of prescriptions per service; (3) the number of prescriptions per head of population.

Table 56—Relationship Between Prescriptions per Service and Annual Cost

Year Ending 31 March			Services per Head of Population	Prescriptions per Service	Prescriptions per Head of Population	Equivalent in Annual Costs of 0·01 Prescriptions per Service
(1)			(2)	(3)	(4)	(5)
1950	..	..	3·3	1·17	3·8	£17,500
1951	..	..	3·4	1·11	3·8	18,800
1952	..	..	3·4	1·16	4·0	20,900
<i>Fifteen days' restriction on prescriptions</i>						
1953	..	..	3·7	1·23	4·5	24,400
1954	..	..	3·7	1·29	4·7	22,600
1955	..	..	3·9	1·25	4·9	24,300
1956	..	..	4·0	1·29	5·3	31,300
1957	..	..	4·4	1·34	5·7	34,000
<i>Ten days' restriction on prescriptions</i>						
1958	..	..	4·3	1·26	5·5	35,400
1959	..	..	4·3	1·31	5·6	39,000

It will be seen that the number of services per head of population appears to be settling down at about 4·3. This, for reasons discussed in last year's report, must be regarded as a reasonable figure.

The number of prescriptions per service is more open to criticism. With better doctor coverage and more potent drugs, it should tend to fall, but the 15 days' restrictions on prescriptions (introduced in 1953) and the 10 days' restriction (June 1958) must have affected it, though in different ways, since the latter was combined with a widening of the extended supply provisions. In the period between the introduction of these measures, however, this figure showed a rising tendency. The most likely explanation of this is patient pressure. With an oversupply

of doctors, which already exists in some areas and is threatening in others, and consequent competition for patients, this is likely to have more and more influence as time goes on.

The practical importance of this factor of prescriptions per service is shown in column (5) of table 56, where the effect on the annual drug bill of a variation of as little as 0.01 prescriptions per service is shown for each year. Dropping this year's ratio from 1.31 to 1.14 would have abolished the whole of this year's excess over last year's total cost. When one considers that a fair proportion of medicines issued are never consumed, it is reasonable to suggest that it should be possible to effect a reduction of this order in the proportion of prescriptions issued per service.

At the same time it must be pointed out that 5.6 prescriptions per head only represents an average of three separate prescription forms a year. There is nothing very startling about that figure. But the average number of prescriptions per form (about 1.8 at present) could, I am sure, be reduced without detriment.

Could Prescribing Generally be More Economical?

For the answer to this question it is only necessary to compare the figures for different parts of the country. The four Pricing Office areas, based on the main centres but covering the country as a whole, are large enough to cancel out any unimportant local influences. Here is a comparison between their patterns of prescribing:

Table 57—Prescribing Patterns, by Pricing Office Areas

Pricing Office Area			Prescriptions per Head of Population*		Average Cost per Prescription*				Cost per Head of Population		
					s.	d.	s.	d.	£	s.	d.
Auckland	..	..	5.9	(6.0)	8	3	(7	8)	2	8	8
Dunedin	..	..	5.7	(5.9)	7	8	(7	2)	2	3	8½
Wellington	..	..	4.8	(4.8)	8	0	(7	2½)	1	18	4¾
Christchurch	..	..	5.1	(5.0)	7	5	(6	9¾)	1	17	10
Dominion	..	..	5.6	(5.5)	7	11½	(7	3¾)	2	4	11

*Previous year's figures in parentheses.

A simple calculation shows that the "Auckland pattern" applied throughout would have cost the country an extra £425,000 this year. The "Christchurch pattern" would have saved about £800,000. About 20 per cent of the doctors in the Dominion practice in the Christchurch area, which includes the Nelson, Christchurch, and Tinaru Health Districts. I see no reason why something closer to the kind of prescribing which satisfies the public in that area, where the standard of practice is, in my opinion, second to none, should not be applicable elsewhere.

The following table demonstrates one important factor contributing to variations between one area and another:

Table 58—Broad Spectrum Antibiotics: Prescriptions per 1,000 Population in the Four Pricing Office Areas

			Prescriptions per 1,000 Population in Each Area				Christchurch (1956) = 100			
			1956	1957	1958	1959	1956	1957	1958	1959
Auckland	..	..	123	143	134	147	192	223	209	230
Dunedin	..	..	49	51	72	91	77	80	112	142
Wellington	..	..	60	75	80	98	94	117	125	153
Christchurch	..	..	64	50	48	63	100	78	75	98
Dominion	..	..	82	93	94	109	128	145	147	170

It will be seen that while the Christchurch doctors, on the whole, have tended to cut down the use of these expensive and potentially dangerous remedies, those in other districts have been using them more freely year by year. Auckland, which has been running at 92–130 per cent above the 1956 Christchurch level, has been prodigal indeed. The average cost of these prescriptions last year was £2 3s. 7d. It may well be that the top half of the North Island, with its sub-tropical climate, has more need for these drugs than the Christchurch area, but it may be questioned if this would justify doubling their use.

What Is Being Done About It?

In essence the problem is simple. It is a question of securing the active and willing cooperation of the doctors in a matter which, as taxpayers, concerns them as much as anyone else, and supplying them with information and practical assistance in connection with prescribing. We could almost afford to ignore completely the small proportion of grossly careless prescribers in this country. They are so few in number that they have no very marked effect on the drug bill as a whole. I am convinced that what we must aim at is an improvement in prescribing generally. The bulk of the profession are conscientious and responsible citizens, honestly doing their best for their patients, and more than willing to take advantage of any assistance which may be offered them.

From the “promotional” aspect the drug industry today is a highly competitive branch of “big business”. Until recently, the only up-to-date information about new drugs which was readily available to the doctor in practice was supplied by the drug firms, who continually assail him through the post, through the journals, and through the persuasive approaches of the “detail men” who visit him in his surgery in ever increasing numbers. There are about a thousand proprietary preparations available at the cost of the fund, and more than 80 manufacturers active in selling them. Most of these drugs are expensive. How can the doctor, often working 10 or 12 hours a day, be expected to keep himself informed of their costs, as well as their relative merits?

The principal measures taken by the Division in pursuit of the policy outlined above may be summarised briefly:

- (a) During the year I addressed six special meetings of the British Medical Association, bringing the total number of Divisions visited to 16. I also read papers at conferences of the British Medical Association ("The Cost of Sleep") and of the Chemists' Service Guild ("The Relationship between Doctor and Chemist in the Health Services of New Zealand") and gave two lectures to senior medical students.
- (b) Dr Hayes and I visited and had discussions with large numbers of doctors in their surgeries in every part of the country.
- (c) Fifteen issues of *Prescribers Notes* were distributed to medical practitioners and senior medical students. These consist of short articles on recent advances in treatment, and notes about the comparative costs of various drugs. Dr Hayes also contributed notes on new drugs to the *New Zealand Medical Journal* and the *Pharmaceutical Journal of New Zealand*.
- (d) To encourage doctors to prescribe by using official names whenever possible, instead of brand or trade names, a booklet listing all the proprietary preparations available on the fund, with their official names or equivalents, was issued to doctors and chemists.
- (e) All manufacturers and agents now comply with the Department's request that the cost be stated, whenever advertising material mailed direct to doctors includes a statement to the effect that a drug is "free on the fund". Very few instances of failure to do this have been noted this year.
- (f) Doctors are now sent, from time to time, a detailed analysis of a representative batch of their own prescriptions, setting out the cost of each item. The list is in two parts (i) prescriptions costing 10s. or over, and (ii) prescriptions costing less than 10s.
- (g) A letter drawing attention to the cost is now sent to the prescriber, whenever a prescription costing more than £5 is received in the pricing office.
- (h) A special circular letter, giving particulars of this year's rising costs, was sent to all doctors in August. They were invited to cooperate along specified lines in an effort to improve the situation. In November they were advised that disciplinary action was being considered against certain expensive prescribers. The latter have since been visited, warned that their prescribing is under scrutiny, and offered assistance in an effort to bring it into line with practice generally. Most of these doctors turn out, on investigation, to be conscientious individuals who sincerely believe that by using potent, if expensive drugs, they are doing the right thing by their patients, and keeping many of them out of hospital. Such men are very willing to take advice when it is offered in the right spirit. Carelessly extravagant prescribing is not a major problem in this country.

- (i) A second Assistant Director has been appointed who will visit general practitioners in all parts of the Dominion to discuss prescribing problems and offer information and advice, particularly about new or expensive products. Dr Stuart MacKay, who has had many years' experience as a general practitioner and consultant physician, commenced duty in June. The Department has been fortunate in obtaining the services of a practitioner of Dr MacKay's seniority and standing.

I wish to thank all those, both within the Department and outside, who have given so much willing assistance this year. In particular, I should like to commend the excellent work done by Dr T. L. Hayes and Mr P. W. Brennan, to both of whom I owe a special word of thanks.

A. W. S. THOMPSON,
Director, Division of Clinical Services.

Table 59—Social Security Fund Medical Benefits: Statement Showing Expenditure Since 1 April 1949

	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
<i>Subdivision I—Maternity Benefits</i>										
Public Hospital fees ..	£ 400,334	£ 414,175	£ 417,058	£ 443,094	£ 455,271	£ 606,447	£ 753,404	£ 776,321	£ 780,364	£ 873,755
Private hospital fees ..	188,739	178,739	168,085	157,782	142,455	170,385	200,532	190,613	180,222	181,254
Medical practitioners' fees ..	268,166	279,191	281,351	298,222	296,967	329,481	396,494	398,848	440,563	411,661
Medical practitioners' mileage fees ..	7,986	7,851	8,397	9,585	9,949	12,662	14,929	14,732	16,131	17,223
Obstetric nurses' fees ..	6,161	5,127	4,066	4,123	4,415	3,545	4,705	4,153	3,055	4,102
Private hospital loans ..	..	..	..	6,616	7,500	15,500	6,500	30,100	29,024	54,498
Private hospital subsidies ..	..	233	5,824	..	8,059	9,287	..	..	..	..
	871,386	885,316	884,781	919,422	924,616	1,147,307	1,376,564	1,414,767	1,449,359	1,542,493
<i>Subdivision II—Medical Benefits</i>										
Capitation fees ..	12,002	6,622	4,519	5,170	4,792	4,998	4,412	4,412	4,411	4,412
Capitation and general medical services mileage ..	131,995	145,396	155,626	171,716	169,643	183,039	197,493	207,292	219,505	205,362
General Medical services ..	2,328,154	2,453,516	2,529,906	2,784,051	2,835,983	3,092,144	3,275,171	3,510,971	3,626,825	3,680,520
Special arrangements under section 82 ..	47,406	42,499	57,223	65,818	63,746	64,450	63,470	69,166	73,019	76,572
Purchase of sites and erection of residences for medical officers appointed under section 82 ..	4,733	13,133	13,309	20,447	11,585	5,549	7,534	5,221	4,132	2,780
Remuneration, allowances, and expenses of medical practitioners in areas other than those covered by section 82 ..	..	..	..	..	..	..	..	..	..	..
	2,524,290	2,661,166	2,760,583	3,047,202	3,085,749	3,350,180	3,548,080	3,797,062	3,927,892	3,969,646
<i>Subdivision III—Hospital Benefits</i>										
Treatment in public hospitals ..	1,566,824	1,557,830	1,562,716	1,566,320	1,598,947	2,638,191	3,662,651	3,564,457	3,595,714	4,252,604
Out patient treatment ..	147,505	164,508	152,930	163,719	175,338	187,406	341,875	397,716	414,234	414,602
Treatment in private hospitals ..	249,085	246,199	269,142	261,878	241,918	375,069	579,542	601,126	616,964	755,215
Treatment in approved institutions ..	48,235	43,477	49,264	50,240	56,107	76,432	95,453	107,057	111,789	117,153
Private hospital loans ..	..	..	..	..	..	30,282	68,151	179,368	180,210	196,423
Private hospital subsidies ..	..	6,949	68,442	79,726	97,138	84,547	3,028	..	..	..
Grant to Royal N.Z. Society for Health of Women and Children towards operating costs Karitane hospitals ..	..	..	10,000	13,335	14,791	19,113	13,966	19,729	11,513	38,522
	2,011,649	2,018,963	2,112,494	2,135,218	2,184,239	3,411,040	4,764,666	4,869,453	4,930,424	5,774,519

Table 59—Social Security Fund Medical Benefits, etc.—continued

	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
<i>Subdivision IV—Pharmaceutical Benefits</i>										
Drugs supplied by—	£	£	£	£	£	£	£	£	£	£
Chemists ..	1,991,350	2,036,990	2,371,769	2,952,773	2,847,919	2,952,269	3,949,164	4,475,606	4,353,752	4,973,558
Medical practitioners ..	11,266	6,803	8,287	9,143	10,267	10,068	15,951	17,934	22,463	27,274
Institutions ..	41,227	53,207	48,160	53,917	61,434	84,994	74,030	79,017	90,326	111,511
	2,043,843	2,097,000	2,428,216	3,015,833	2,919,620	3,047,331	4,039,145	4,572,557	4,466,541	5,112,343
<i>Subdivision V—Supplementary Benefits</i>										
Radiological services ..	276,999	294,883	310,189	350,120	379,641	409,381	448,374	474,369	471,792	471,202
Laboratory services ..	118,447	128,546	149,917	178,892	189,070	227,914	277,458	338,673	414,863	471,795
Physiotherapy services ..	63,840	67,388	62,572	62,249	62,575	64,347	64,863	66,499	61,569	61,679
Specialist service (neuro surgery) ..	6,553	4,089	3,019	4,654	2,794	2,719	3,181	2,872	2,990	3,790
District nursing services ..	116,007	113,571	124,250	114,931	127,016	137,339	150,117	162,016	181,892	195,518
Dental services ..	324,933	385,612	469,989	545,002	659,570	716,251	798,756	906,420	932,451	940,590
Domestic assistance ..	3,082	3,520	4,699	5,943	7,015	6,071	7,744	9,977	12,560	12,365
Grants to public servants and dependants in respect of medical, hospital, etc., expenses while stationed overseas ..	..	795	1,996	1,960	2,110	2,703	2,620	2,275	4,332	4,562
Ambulance benefits ..	303	..	..	..	..	..	..	..	..	..
Artificial aids benefits (commenced 1 July 1947), (artificial limbs, hearing aids, contact lenses) ..	99,777	62,534	55,322	46,981	61,721	63,000	63,646	73,229	82,786	93,782
Payments under section 26, Social Security Amendment Act 1943 ..	..	..	..	190	1,310	3,090	1,359	81,263	117,782	206
Grants to intellectually handicapped children's parents' associations ..	..	..	..	..	..	251	581	1,280	1,074	885
Grand totals	1,009,941	1,060,938	1,181,953	1,310,922	1,492,822	1,633,066	1,818,699	2,118,873	2,284,091	2,256,374
Recoveries	8,461,109	8,723,383	9,368,027	10,428,597	10,607,046	12,588,924	15,547,154	16,772,712	17,058,307	18,655,375
Net totals ..	35,411	31,190	4,250	4,033	5,285	4,489	5,566	10,053	7,666	4,774
	8,425,698	8,692,193	9,363,777	10,424,564	10,601,761	12,584,435	15,541,588	16,762,659	17,050,641	18,650,601

Table 60—Cost per Head in Health Districts, General Medical Services and Capitation 1958–59

Health District	Population as at 1 April 1958	Number of Doctors	Average Population per Doctor	Method of Claiming		Total Cost of General Medical Services and Capitation, Excluding Milage	Average Amount Claimed per Doctor	Total Cost of General Medical Services and Capitation, Including Milage	Cost per Head of Population
				Direct	Indirect				
Whangarei	86,560	55	1,574	Per Cent 100	Per Cent ..	£ 128,778	£ 2,341	£ 149,247	£ 1 14 6
Auckland	529,331	527	1,004	81	19	1,089,962	2,068	1,126,664	2 2 7
Hamilton	236,407	136	1,738	96	4	353,195	2,597	390,397	1 13 0
Gisborne ..	173,108	119	1,455	71	29	256,016	2,151	269,466	1 11 2
New Plymouth	93,350	63	1,482	100	..	138,161	2,193	145,731	1 11 3
Palmerston North	177,500	106	1,675	71	29	226,662	2,138	237,876	1 6 10
Wellington	274,430	220	1,247	53	47	387,269	1,760	395,499	1 8 10
Nelson ..	71,470	54	1,324	52	48	110,126	2,039	120,240	1 13 8
Christchurch	296,169	241	1,229	76	24	467,630	1,940	494,094	1 13 4
Timaru ..	95,060	62	1,533	85	15	139,962	2,257	152,790	1 12 2
Dunedin ..	148,520	117	1,269	76	24	266,517	2,278	281,470	1 17 11
Invercargill	93,610	62	1,510	53	47	105,225	1,697	116,772	1 4 11
Totals	2,275,515	1,762	1,291	76	24	3,669,503	2,083	3,880,246	1 14 1

REPORT OF THE DIRECTOR, DIVISION OF PHYSICAL MEDICINE

The importance of obtaining accurate information regarding the incidence of rheumatic disease in New Zealand and the effect of this group of diseases on the economy of the country is obvious. Other countries, particularly the United Kingdom and the United States, have been carrying out various surveys from which striking information has been obtained. For instance, the patient consulting rate for arthritis and rheumatism in the U.K. is higher at 64·9 per thousand than for any other condition except the common cold. (*Morbidity Statistics from General Practice*, Vol. 1, 1958, H.M.S.O.).

In order to ascertain the prevalence of rheumatic diseases in New Zealand, a pilot survey was carried out in 1956 in the East Cape area as to the prevalence of rheumatism in the Maoris, and with the active cooperation of the School of Social Science of the Victoria University of Wellington, a further and more complete survey of the population of Rotorua was carried out in 1957. The figures from both these surveys have not yet been completely analysed, and a full report awaits publication. Nevertheless, the following information has been elicited, and is quoted here for information:

1. There is a high prevalence of gout amongst the Maoris, as shown by the fact that 8·2 per cent of adult Maori men belonging to Whana-apanui tribe had gout (1956 survey).

2. In an urban area, 6 per cent of adult Maoris had gout compared with 0·7 per cent of adult Europeans.

3. Rheumatoid arthritis is less common among Maoris than among Europeans. (The incidence of acute rheumatism in Maori children, however, is greater than in European).

4. The peak years for rheumatic complaints are the fifties.

5. Approximately 16 per cent of the population have definite, probable, or possible rheumatoid arthritis. (These figures agree substantially with those from the United Kingdom and the United States).

6. Between 2 per cent and 3 per cent of the adult European population may be expected to have rheumatoid arthritis requiring some medical supervision, although only a proportion of them will need continuous or intensive medical care.

7. From the Rotorua survey it has been estimated that a minimum of 55,000 weeks has been lost by 20,000 workers in urban districts of New Zealand on account of rheumatic disease, and this represents approximately 12 per cent of all time lost through illness.

That acute rheumatism is still a serious problem among Maoris was strongly confirmed by Dr C. H. Garlick of Whangarei in a paper read before the New Zealand Rheumatism Association last October. It would appear that north of a line joining Wanganui and Hastings the incidence of rheumatic fever has not fallen, as it had done elsewhere in New

Zealand and also in Britain and the United States. A review carried out by Dr Isdale in 1955 and 1956 seemed to show that the mortality rate among Maori children might well be more than 40 times greater than among European children.

The problem therefore deserves much greater attention than it is receiving. A special ward has been available throughout the year at the Queen Elizabeth Hospital for the reception of cases of these diseases, and through the courtesy of the Division of Clinical Services, the attention of medical practitioners has been drawn to the seriousness of the problem, and their cooperation in an active attack on it has been invited. The active interest and cooperation of the Maori people themselves is also a necessity if much progress is to be achieved.

Specific treatment for rheumatoid arthritis is still not possible, and the danger of treatment by means of steroids such as cortisone, and its derivatives is now better understood. Acute hyper-cortisonism is now widely recognised, and the effects of the withdrawal of steroids better known. Chronic hyper-cortisonism, however, is still sometimes not recognised and many patients have been admitted to the Queen Elizabeth Hospital in poor condition, where the development of this condition had been mistaken for an exacerbation of symptoms, and the dosage of steroid had been increased.

The search continues for newer and better steroids – those which are more powerful and which have less tendency to produce unpleasant or dangerous side effects. The fact that with many patients these drugs are virtually “drugs of addiction”, that they merely suppress symptoms rather than cure the disease, is still occasionally overlooked.

CEREBRAL PALSY

The public interest in this condition is maintained although there is reason to believe that the incidence is falling. Once the backlog of neglected cases with deformities has been dealt with it would seem that the treatment of the condition should be mainly domiciliary.

It is now usually possible to make the diagnosis at the age of six months, and if the mother is carefully instructed, and the services of a visiting cerebral palsy therapist are available, the child can be managed at home under the supervision of the family doctor. A residential institution to cope with those children when domiciliary management is difficult or unsatisfactory is however necessary, and this institution should form the centre for the coordination of all activities in connection with this disease. Any schools for cerebral palsy should be restricted to those children who are so *physically* handicapped that they cannot manage in an ordinary school. As stated in a previous annual report, such schools should not admit children with physical disabilities who are incapable of learning, unless they can be put in an entirely separate class from those cerebral palsy children with a normal range of intelligence. Every effort should be made to get the cerebral palsy child to a normal school where he can mix with normal children.

Most Public Health and Plunket nurses have had lectures on the subject to enable them to take an active part in the discovery of these children at the earliest possible age.

The visiting therapist scheme has been difficult to foster, but two new recruits have just been obtained and will commence duties during the coming year.

Studies show that cerebral palsy is common in premature babies, in those where there is a blood incompatibility with the mother, and in those who suffer from anoxia at birth. Although our knowledge is not yet sufficient to prevent all of these conditions, we now realise that with proper obstetric and paediatric care and adequate treatment the effects will be such that cerebral palsy and other conditions associated with these causes, will be less liable to arise.

PHYSIOTHERAPY

As a result of continued advertising, there was an improvement in the staffing of the School of Physiotherapy, but the position is still unsatisfactory and will not be relieved until 1960, when two new teachers will take up positions. The possibility of the training of teachers of physiotherapy in New Zealand is now under investigation. The number of new students coming into the School was 64, one more than last year. The number of new bursaries awarded was 54, and there were a total of 118 bursars in training. The total number of physiotherapy students who graduated during the year was 42.

During the year 32 physiotherapists from the United Kingdom registered, of whom 27 are still practising. Reciprocal agreements regarding registration with other Commonwealth countries have been reached, and this will facilitate the opportunities for overseas physiotherapists to come to this country and thus reduce the adverse balance due to New Zealand trained physiotherapists going overseas.

Hospital Physiotherapy Staffing for Year Ending 31 December 1958 (Figures for 1957 in parenthesis)

Total establishment	..	..	..	223	(218)
Average staff employed	..	..	..	188.4	(176)
Average shortage	..	..	..	34.6	(44)
Highest number employed	..	..	..	212	..
Lowest number employed	..	..	..	177.5	..

Inspection of hospitals by the Inspector of Physiotherapy was restricted during the year mainly to those hospitals which were subsidiary teaching schools, owing to other calls on her time. Towards the end of the year under review, an assistant to the Inspector of Physiotherapy was appointed to enable hospital inspections to be resumed.

Colombo Plan students have been accepted for training at the Physiotherapy School in Dunedin for the past three years, and one of the first four students qualified this year. These students will be accepted up to a maximum of six in any one year.

The Department in cooperation with hospital boards arranged for physiotherapy assistance to Fiji in the severe epidemic of poliomyelitis which occurred there last year.

OCCUPATIONAL THERAPY

During the year 28 students commenced at the Occupational Therapy School, making a total of 68 students now in training. Twenty-eight students completed their training and became registered occupational therapists. In July, a new three-year syllabus was inaugurated and, with this now in force, the training standard of New Zealand occupational therapists compares more than favourably with most overseas training programmes.

QUEEN ELIZABETH HOSPITAL

There has been a relatively full medical staff during the year and it has been possible to catch up on some of the backlog by increasing the turnover of patients. During the year, 740 inpatients were admitted as compared with 591 in the previous year. Ward IV was opened during the year for the admission of children suffering from acute rheumatism and juvenile rheumatoid arthritis, and facilities have been provided for their education.

Treatment methods were the same as mentioned in the report last year – namely, concentration on relieving pain, improving patients' functional capacity, and preventing deformities. It seems that our current attitude to the use of steroid therapy is the same as that in the best rheumatism centres overseas, i.e., no patient is ever started on a course, although many of them who have been receiving it before admission have to be continued on it.

The training programme for nursing aids was continued and some alterations have been carried out in the nurses' home to facilitate these arrangements. This has resulted in the matron having less difficulty in obtaining nurse aids for training.

The medical-social workers had a particularly busy year and in addition to their hospital work accomplished 200 home visits, nearly double the figure of the previous year.

Bathhouse

A final decision as to the future use of the main bathhouse has not yet been reached. No medical consultations were carried out there during the year, but the building has been available for various forms of hydrotherapy. The number of treatments given to patients during the year was 14,074. During the year the sum of £4,000 was expended on repairs to the fabric of the building.

I am indebted to Dr Rose, the Medical Superintendent of the Queen Elizabeth Hospital, for much of the information in this report, and I would like to commend the work that the staff there have accomplished.

G. A. Q. LENNANE,

Director, Division of Physical Medicine.

REPORT OF THE DIRECTOR, NATIONAL HEALTH INSTITUTE

Buildings

The new animal breeding house and adjoining renovated vaccine station were brought into use on 6 June 1958.

Staff

Dr W. Hamilton was appointed as virologist and commenced duty on 14 April 1958.

During the year, two assistant bacteriologists were recruited and one resigned.

Hospital Laboratory Advisory Committee—With more general knowledge of the committee's function of advising the Director-General of Health on the training and examination of hospital bacteriologists, numerous inquiries have been received from those in training. The number of applications for concessions or exemptions from the requirements of the training course or the prerequisite qualifications has increased. In addition, many general inquiries have been received about the career prospects in medical laboratory work both from interested individuals and vocational guidance officers.

The committee held four meetings during the year. A major problem with which the committee has had to deal has been the very large number of candidates now coming forward for examination. To meet this situation, accrediting for the practical portion of the Intermediate Examination for trainees from Auckland, Wellington, and Christchurch has been introduced on a trial basis.

Four examinations in hospital laboratory practice have been held. Fifty candidates were examined in the two Intermediate Examinations and 47 passed. Nineteen of the 20 candidates for the Final Examination were successful and were awarded the Certificate of Proficiency in Hospital Laboratory Practice.

Educational Activities

Health Inspector Training Course—Eleven Health Inspector trainees attended the 1958 course. Of these, nine were sponsored by the Department of Health, one by the Army Department and one by the Wellington City Council. This year the short course at Massey College on milk technology had to be abandoned because there were insufficient numbers to justify Massey College conducting it. Lectures were arranged to cover the basic training subjects missed, but it is hoped that these inspectors will be able to attend the course at Massey College in 1959.

Thanks are due to the Director and staff of the Wellington Technical College for their cooperation and assistance in running the course.

Fourteen candidates passed the examination of the Royal Society of Health held in May 1958.

Refresher Course for Health Inspectors—Another successful fortnight's refresher course was given to more senior inspectors at Massey College, Palmerston North, from 24 November to 5 December 1958. Sixteen departmental and 14 local body inspectors attended the course which covered a wide range of technical subjects. The course provided a valuable opportunity not only for revision but also for contact and discussion between inspectors serving different districts and authorities on public health problems common to them all. The success of the refresher course and the reception accorded it by inspectors, both local body and departmental, means that a similar South Island course should be arranged and it is hoped that it will be possible to hold one in 1960.

Training of Bacteriologists—In-service training consisting of practical work and weekly lectures has been given to the assistant bacteriologists.

In addition to the foregoing, Dr H. T. Knights, epidemiologist, has given lectures on the control of hospital infection at a number of hospitals, and the director and epidemiologist have given lectures to the post-graduate nurses.

Epidemiology

Dr H. T. Knights, epidemiologist, has continued the study of hospital cross infection. In the course of this work, the following hospitals have been visited: National Women's Hospital, Auckland; Waikato Hospital, Hamilton; Huntly Hospital; Te Kuiti Hospital; Tauranga Hospital; Masterton Hospital; Lower Hutt Hospital; Wairau Hospital, Blenheim; St. Helens Hospital, Christchurch; Timaru Hospital; Oamaru Hospital; and Queen Mary Hospital, Dunedin. In each case, studies have been made to assess the various factors at work in cross infection and to indicate means of controlling them and reducing the present incidence of infection.

In the latter part of the year, considerable work was done on the problem of terminal disinfection of wards after the discharge of patients infected with staphylococci. Preliminary results are encouraging, the work is continuing, and it is hoped that it will be possible to indicate more effective techniques than those currently employed.

It is noteworthy that detailed statistics of staphylococcal infection, as of other diseases, are not available to help in planning control measures or in assessing their effect. A preliminary investigation has been made by the biometrician of infections in hospital staffs and further sample surveys are being planned.

Laboratories

With a further increase of 55 per cent in the number of specimens received for examination in 1958, the laboratories were fully extended and no further increase will be possible with the present staff. A public health laboratory should not be fully committed to regular routine work since this makes it impossible to cope with sudden and unexpected large scale demands for public health investigations (such as the screening of typhoid contacts from an immigrant ship which occurred in 1958) which are one of its principal functions. One of the main sources of laboratory work has been the phage typing of an ever increasing number of staphylococcal cultures from hospitals. To restore flexibility to the

National Health Institute laboratories and at the same time improve the speed of phage typing, the cooperation of the main base hospital laboratories at Auckland, Wellington, Christchurch, and Dunedin has been sought in a scheme to decentralise this service. This decentralisation should take place in the first half of 1959.

During the year 13,488 specimens were received and the number from each health district for the three years 1956–58 is given in table 61. In addition to those shown in table 61, 91 specimens were examined for other Departments, 84 for the Meat Industry Research Institute, 163 horse and pig sera in a survey organised by the World Health Organisation and 11 specimens from Samoa. The remainder of the specimens originated from work within the institute itself.

Table 61

Year			Whangarei	Auckland	Hamilton	Rotorua	Gisborne	New Plymouth	Palmerston North	Wellington	Nelson	Greymouth	Christchurch	Timaru	Dunedin	Invercargill	Total
1956	..	..	198	1,142	74	205	138	72	223	2,627	221	2	194	5	36	7	5,144
1957	..	..	102	2,808	82	423	506	157	382	2,986	122	21	233	50	378	8	8,258
1958	..	..	204	3,377	186	421	403	136	167	4,903	137	31	2465	87	513	64	13,094

General Bacteriology

The general bacteriology section examined 2,794 specimens during the year, almost double the number examined in the previous year. All types of examination increased, but the overall rise was due largely to an outbreak of Sonne dysentery in the Wellington district and the examination of several hundred contacts of typhoid and paratyphoid cases from an immigrant ship. In the screening of these contacts, no other cases or carriers of typhoid were discovered but paratyphoid B and 3 different types of food poisoning organisms were isolated.

Many more cultures of enterobacteriaceae have been referred for identification or confirmation. Two hundred and forty-two cultures of typhi-murium have been identified. This large number was due, firstly, to the confirmation of identity of strains isolated by the Meat Industry Research Institute and, secondly, strains have been collected from human infections by hospital laboratories at my request. The National Health Institute was asked by the Central Enteric Reference Laboratory in London to send human strains of typhi-murium for comparison of phage types with those being typed for the N.Z. Meat Industry Research Institute. Sixteen other types of food poisoning organisms were identified among the cultures received. Two of these, *Salmonella manchester* and *Salmonella braenderup* had not been identified previously in New Zealand.

Of the dysentery organisms, *sonnei* was much the most common; a few cultures of *flexneri* type 1, type 2, and type 3 were also indentified.

Many hospital laboratories are now making use of the leptospiral diagnostic service and 943 serum samples were examined during the year.

Virus Laboratories

With Dr Hamilton's appointment as virologist, it has been possible to extend the range of the virus diagnostic services offered.

The work of the virus laboratories is broadly divisible into (a) the examination of blood serum for evidence of specific antibodies indicating infection; (b) attempts to isolate the causative virus.

The main type of examination used for the investigations under (a) is the complement fixation test and these are summarised in table 62. The techniques appropriate to the study of toxoplasmosis (a protozoan infection) are similar to those used in virus work and these examinations are performed in the virus laboratories.

Table 62

Complement Fixation Tests for								
Influenza A	Influenza B	Influenza C	Adeno- virus	Psittacosis Group	Q Fever	I.CM	Mumps	Toxo- plasma
44	46	23	92	235	6	23	17	574

Other serological tests employed included 59 virus neutralisation tests and 546 toxoplasma dye tests. In addition to these routine tests, 163 horse and pig sera were examined by complement fixation tests and the haemagglutination-inhibition tests for antibodies to influenza. These investigations were undertaken as part of a world wide investigation organised by the World Health Organisation because of the suggestion that these animals might have been affected in the 1957 pandemic of influenza. The findings in the animal sera examined in New Zealand were completely negative.

In July 1958 a small outbreak of conjunctivitis among school children was considered on serological grounds to be due to an adenovirus infection but the virus was not isolated. Five cases considered to be trachoma on clinical appearances were investigated. No virus was isolated but using psittacosis and trachoma virus antigens, some positive serological results were obtained. However, these were not considered sufficiently definite to be of real assistance in diagnosis.

Virus isolations have been attempted from 162 specimens and the following strains of virus were isolated: Seven strains of poliovirus type 1 and one strain of poliovirus type 2, three strains of *Herpes febrilis*, four strains of adenovirus one each of type 1, 2, 3, and a type related to type 7, and eight Influenza A viruses of Asian type were isolated. These last named viruses were isolated from an outbreak of influenza in the last few weeks of 1958; the results of the investigations in this outbreak were instructive as all the virus isolations were made from throat washings obtained from sailors in a visiting ship of the United States Navy, whereas virus was not isolated from local cases nor from material sent from a distance. This difference presumably reflects the ease of isolation from fresh material taken in the early acute stage under the direct supervision of the medical officer.

Other work has included attempts to isolate viruses from house mice which may be important in causing human disease. Also the latency of adenovirus in human tonsils has been studied using the persistence of these viruses in the rabbit spleen as an experimental model.

Phage Typing Laboratory

9,575 specimens were examined. These consisted of cultures sent for typing and specimens sent for isolation of staphylococci. In all, 7,275 strains of staphylococci were typed. Table 63 shows phage type distribution of these staphylococci after repeat cultures from the same patient and other duplicate results have been excluded.

Table 63—Distribution of Staphylococcal Phage Types

—	Group I	Group II	Group III	Group IV	80/81	Untypable	Unclassified	Total Tested
Adult infections ..	97 (7%)	174 (13%)	203 (15%)	7	728 (53%)	134 (10%)	17 (1%)	1,360
Adult swabs ..	94 (20%)	82 (17%)	118 (25%)	0	73 (15%)	102 (21%)	13 (2%)	482
Baby infections ..	24 (5%)	47 (9%)	69 (15%)	0	306 (61%)	50 (10%)	4 (1%)	500
Baby swabs ..	118 (8%)	124 (9%)	348 (23%)	4	560 (38%)	273 (19%)	15 (1%)	1,438
Hospital staff infections ..	15 (6%)	15 (6%)	10 (4%)	0	211 (81%)	6 (2%)	3 (1%)	260
Hospital staff swabs ..	256 (14%)	138 (8%)	413 (23%)	2	583 (33%)	349 (20%)	34 (2%)	1,775
Dust and air samples ..	86 (11%)	46 (6%)	128 (17%)	5 (1%)	274 (38%)	147 (22%)	36 (5%)	722
Miscellaneous ..	33 (11%)	42 (14%)	59 (19%)	0	104 (33%)	63 (20%)	7 (2%)	308

As is shown in the table, type 80/81 is still the commonest infecting type. The types acquired by babies in hospitals (baby swabs) closely reflect the types found in their environment (dust and air samples). The miscellaneous category includes strains from fingernail swabs, blankets, napkins, safety pins, and other equipment.

The Research Officer, Dr G. M. Richardson, has been engaged in:

- 1. A study of the growth of staphylococcus in media in which the nature and concentration of metal ions are controlled by the use of a mixture of a metal complex with excess of the complexing agent. A number of different chelating agents have been used. Apart from the fundamental interest of this study, it has led to the development of a very promising selective medium for isolating coagulase-positive staphylococci from a mixed culture.
- 2. Determination of choline esterase in blood in persons exposed to organo phosphorus compounds. Studies have been made of the stability of the enzymes.
- 3. A continuation of the work on the nutrition of leptospirae and on the preservation of complement fixation test reagents.

Vaccines

Forty thousand ml. of TAB vaccine were prepared, tested, and dispensed: 33,200 doses of smallpox vaccine were issued.

Conclusion

I wish to thank all the members of the staff for the willing and efficient manner in which they have worked throughout the year.

J. D. MANNING,
Director, National Health Institute.

REPORT OF THE DIRECTOR OF WELFARE SERVICES

CARE OF THE AGED

Seminars on the Care of the Aged

During the year seminars on the Care of the Aged were held in Wellington, Christchurch, Auckland, Dunedin, and Napier for matrons, managers, and assistant matrons of old people's homes. With only two exceptions representatives from every old people's home in the Dominion were present at one or another of these seminars.

Accommodation for Old People

(i) *Religious or Welfare Organisations*—During the year religious or welfare organisations were granted subsidies totalling £73,851 to assist them to provide accommodation for 45 old people. The total subsidies and grants approved under this heading since April 1950, when the present policy was initiated, amounted to £1,974,212, and the total number of old people who will be accommodated is 2,007. In addition the Department is providing loan finance amounting to £71,196 to assist in the construction of these homes.

(ii) *Local Authorities*—Subsidies totalling £163,901 and loans totalling £120,435 have been granted to local authorities during the year ended 31 March 1959 to assist them to build cottages or flats for 290 old people. Up to this date the total subsidies approved since the inception of the scheme amount to £694,955 and the total loans approved amount to £797,214. With this assistance local authorities will be providing accommodation in cottages or flats for 1,507 old people.

Meals on Wheels for Old People

During the year under review one additional scheme was approved for the supply of meals on wheels for old people living in their own homes. As at 31 December 1958 there were 16 separate meals on wheels schemes in operation throughout New Zealand and altogether 668 old people were being supplied with meals in their own homes. The general tendency has been for additional old people to be included in each scheme.

Laundry Service for Old People

During the year ended 31 December 1958 one additional scheme was approved for the provision of laundry service to old people in their own homes. As at this date there were eight separate laundry service schemes in operation serving 166 old people.

REHABILITATION

Early in August 1958 a seminar on Rehabilitation was held at Queen Elizabeth Hospital, Rotorua, for the Medical Superintendents of the larger public hospitals in New Zealand and for representatives of certain other associated occupations interested in rehabilitation. The papers prepared for the seminar and the subsequent discussions covered a very wide field.

Of the conclusions reached, perhaps the most important, was that which stated "that the public hospital should be the functional base in any rehabilitation service". It must not be thought however that there are no rehabilitation services in existence at the present time or that the services which do exist are not coordinated. Nevertheless, there is a scope for a considerable improvement in existing services and it is important that the medical profession as a whole should acquire a greater awareness of rehabilitation techniques, their treatment possibilities and the part these techniques have to play in the treatment of sick, injured and aged patients.

Arising out of the seminar the Department has carried out a survey of paraplegics, from which the following conclusions emerge:

A. (1) The most common type of paraplegia is that caused by injury.

Of a total of 110 paraplegics in New Zealand 72 were traumatic.

(2) Males are more frequently affected than females. Of the 110 cases 80 were males.

(3) The majority of paraplegics fell within the age group 20 to 39 years.

(4) Of the 110 paraplegics, 78 were resident in the North Island and 32 in the South Island.

The survey also showed that:

B. (1) Almost as many paraplegics are cared for at home (54) as are cared for in hospital or institution (56).

(2) The rehabilitation needs as assessed by notifying doctors divide the cases into 82 that would benefit from a stay at a rehabilitation centre, 20 who have already been rehabilitated and eight for whom little further can be done.

(3) It was considered that 55 (37 male and 18 female) would benefit from a stay in a paraplegic centre in the North Island while the comparative figures for the South Island are 27 (20 male and 7 female).

A further survey has also been made of the numbers of disabled and injured persons employed by the Railways Department, the Post and Telegraph Department, the Public Service Commission and hospital boards. Altogether, 1,881 persons falling into these categories are employed by the organisations referred to.

Details are:

Table 64

	Hospital Boards	P. and T. Depart- ment	Railways Depart- ment	Public Service Depart- ments	Total
Amputation upper limbs ..	12	8	21	59	100
Amputation lower limbs ..	17	38	47	88	190
Otherwise crippled or injured ..	54	224	132	262	672
Pulmonary tuberculosis ..	66	40	29	117	252
Blind	16	29	..	23	68
Deaf	22	22	15	98	157
Other disabilities	98	..	137	207	442
Total	285	361	381	854	1,881

Many of these individuals are fully efficient within certain limits and by employing them the agencies concerned are not only contributing to the welfare of the individual but they are also assisting them to contribute to our national productivity.

A good example of a service which can be developed as part of a rehabilitation service is the Home Occupational Therapy Service which has been established by the Otago Hospital Board in Dunedin. Quite apart from freeing hospital beds, which in itself is important, this service plays an important part in the medical treatment of the persons concerned.

At the request of the Interdepartmental Committee on Rehabilitation the Department has recently investigated facilities for vocational training, assessed the need for further facilities for vocational training, surveyed existing sheltered workshops in New Zealand and also assessed the need for additional sheltered workshops. The investigation into these matters was completed during the year under review and a report on the investigation has been prepared.

ACCOMMODATION FOR YOUNG PEOPLE

During the year subsidies totalling £9,010 have been approved to assist in providing accommodation for 29 young people. Since this policy was initiated in 1951 subsidies totalling £298,249 have been approved and the buildings erected or to be erected will accommodate 486 young people.

G. O. L. DEMPSTER,
Director of Welfare Services.

REPORT OF THE DIRECTOR, DOMINION X-RAY AND RADIUM LABORATORY

Towards the end of the year the Director, Mr G. E. Roth, was asked to join the United Nations' International Atomic Energy Agency in Vienna, and his secondment was approved early in 1959. This report has been prepared on his behalf since his departure in mid-February.

Previous reports on the work of the Laboratory have covered the financial year (from 1 April to 31 March), but in future the period of the calendar year will be used.

The following tables have been prepared and are available from the Laboratory (P.O. Box 1456, Christchurch, New Zealand):

Table 1—The Number of X-ray Plants Registered on 31 December 1958: (subdivided into categories depending on the purpose for which they are used and whether the ownership is public or private).

Table 2—The Number of Persons Holding Licences to Use Irradiating Apparatus or Radioactive Substances on 31 December 1958: (with subdivisions according to the purpose for which the irradiating source may be used).

Table 3—The Amounts of Radioactive Substances Ordered During 1958: (showing the numbers of orders and the cost—excluding transport—for each isotope).

Table 4—Detailed Analysis of Radioactive Substances Ordered During 1958: (showing the number of orders placed, and the activity of each substance imported for hospitals and medical research laboratories, for various Government Departments, for universities and for industry and services).

Table 5—Analysis of the Exposures Received by the Radiation Test Films Evaluated During the Last Eight Years.

Table 6—Radiation Test Film Distribution as on 1 January 1959: (showing the numbers of film wearers in the various occupational groups and the frequency with which they are issued films).

Comparison of the statistics with those for the previous year shows that the number of X-ray plants registered (1,131) and the number of licences (929) issued for their use are almost static. The greatest relative change occurred with shoe-fitting units where both figures have declined by some 20 per cent. The use of radioactive substances has increased. The cost of the isotopes exceeded £6,000 this year, the major importers being the hospitals, and the variety of substances has extended.

The Radiation Test Film Service, besides continuing to assure and educate the 2,334 radiation workers who use it, indicates the effectiveness of the Laboratory's work programme. The following table extends that given in page 126 last year's report and shows once again a reduction in the figure for each exposure interval except the lowest. This is a move in the direction recommended by the International Commission on Radiological Protection when it issued the statement:

"Whilst the values proposed for maximum permissible doses are such as to involve a risk which is small compared to the other hazards of life, nevertheless, in view of the incomplete evidence on which the values are based, coupled with the knowledge that certain radiation effects are irreversible and cumulative, it is strongly recommended that every effort be made to reduce exposures to all types of radiation to the lowest possible level".

Table 65—Analysis of the Exposures Received by the 21,709 Radiation Test Films Evaluated During 1958

Exposures are Expressed as a Percentage of the Maximum Permissible Weekly Exposure of 0.3r.

Percentage of M.P.W.E.	Percentage of Films Within Exposure Interval						
	0-5%	6-10	11-20	21-33	34-66	67-100	Over 100
Films worn by X-ray workers ..	96.42	2.54	0.71	0.18	0.07	0.03	0.05
Films worn by radium workers, industrial radiographers, deep therapy, technicians	87.42	6.63	3.69	0.92	0.89	0.15	0.30

This table indicates that only one out of every 100 films worn by X-ray workers showed an exposure greater than one-tenth of the maximum permissible weekly exposure.

A brief review of the work done in the various sections of the Laboratory follows, arranged alphabetically under the individual section headings.

Clerical Section

During the year Mr M. Metcalfe was appointed Executive Officer.

The possibility of the Laboratory providing a bulk ordering and dispensing service for the more commonly used radioactive isotopes was investigated. Iodine 131 and Phosphorous 32, used regularly and in quantity by the hospitals, were the only two substances which warranted serious consideration. It was initially thought that these materials may be produced by the Atomic Energy Establishment at Sydney, Australia. This was later found not to be the case and a careful study showed that a further marked increase in the amounts of these isotopes imported would be required before the provision of a centralised service would be economically justifiable. The major hospitals are already receiving regular bulk orders and it is considered that in the meantime they are likely to be able to supply any urgent requirement for a small amount.

Previously all radioactive isotopes have been ordered from England but during 1958 several orders were obtained from the United States of America. It is thought that in future the sources of supply will multiply and consideration has been given to ensuring the control of importation under such conditions in order that dangerous amounts of radioactive materials do not come to the hands of unqualified people.

The introduction of a standardised cable form of ordering isotopes from England has reduced importation costs.

The volume of routine work undertaken has continued to increase steadily but some saving has been made by the approval of a new stores classification and by a restriction on the amount of microfilming undertaken.

Diagnostic Section

During the year this section's activities were extended to an initial survey of radiation hazards in diagnostic radiology in the South Pacific; the main Island of Fiji, Western Samoa, and Rarotonga were visited.

Work in Fiji was carried out at the request of the Fijian Government. The programme was extended in Fiji to a survey of radium handling and facilities, and in Samoa to therapeutic applications of the X-ray machine.

In the routine field work for the year the section's two physicists checked safety of the operation of some 600 X-ray machines. The following table summarises the numbers and types of these X-ray machines:

Table 66

Type of X-ray Unit	New Zealand	South Pacific
Medical diagnostic	262	10
Dental diagnostic	257	3
Chiropractic	27	..
Veterinary	8	..
Shoe-fitting	21	..
Industrial, experimental, education, and research	12	..

With the cooperation of almost half those New Zealand dentists who use X-ray machines, a Dominion survey was commenced in September of the gonadal radiation doses received by child patients during dental bitewing radiography. Preliminary results showed that, compared with an earlier pilot trial, there had been a substantial decrease in the average radiation doses per patient for this particular examination. The lowest recorded exposures achieved by the use of radiographic techniques advocated by this Laboratory compared very favourably with those where light lead-rubber capes were used to protect the patients' gonads.

Two circulars were issued to all dentists who use X-ray machines in New Zealand. The first was entitled "General Methods of Dose Reduction in Dental Radiography". To take full advantage of the suggestions offered in this circular, many dentists found that much could be done to improve their film processing techniques, and a second circular entitled "Film Processing" was issued.

Three investigations merit mention, two of these being undertaken at the request of radiologists. The first involved comparisons between the results of a measurement at various radiographic settings of the outputs of a three-phase and a conventional single-phase diagnostic unit. The second involved tests using different phantoms, various kilovoltages, and several combinations of film type and intensifying screens. From these tests the techniques giving the lowest patient exposure consistent with satisfactory radiographs were chosen for use in the radiologist's practice. The third project was the testing of a newly available radiation monitoring film with unique characteristics giving a greatly extended range of sensitivity. It was found that this film would have limited but useful application in our work.

Radioactive Substances Section

The field work of the section involved visits to 18 establishments licensed to use radioactive substances and advice and assistance in the safe use of these materials. In particular, improved radium storage and handling facilities were designed and introduced into two hospitals;

assistance was given in the application of neutrons to measure the moisture content of various materials, and modifications were suggested in the plans put forward for the installation of an industrial γ -radiography unit and two cobalt 60 γ -irradiation sources for research use. The output of seven β -ray applicators was measured using the Laboratory's extrapolation chamber, and one cobalt 60 standard was calibrated against the Laboratory's standards.

A number of small and obsolete radium containers of insufficient worth to justify the expense of individual reclamation constituted a potential hazard. The Laboratory arranged for their disposal to an interested hospital which has now sent them overseas in part-payment for new applicators.

A number of articles intended for use by the general public, which contain small but possibly hazardous quantities of radioactive material, have come to our notice. It is probable that in the future, there may be a considerable market for such articles as these and a start has been made on developing a system of control which will allow their use but will minimise the hazards to the public. It would not be practicable in such a case as this to apply the full licensing procedure, and a modified form under which a licence is issued to the importer or manufacturer, who must then comply with the necessary safety precautions is being worked out.

There is also an increasing number of self-luminous articles coming on the market. Many of these have been tested at the Laboratory and, in the majority of cases, have been found to contain phosphorescent compounds with no radioactive material. A few, however, have been found to contain radioactivated luminous compounds, but so far none which could be considered to be a public danger.

Work has continued on the measurement of radioactive fall-out in New Zealand and her dependent territories. On account of New Zealand's geographical position it is most unlikely that any measurable, let alone hazardous, quantity of radioactive fall-out would be found suspended in the atmosphere. On this account air monitoring is restricted to a single unit operated at the Laboratory, and its results are interpreted in terms of the minimum activity which would give us grounds for further investigation, but so far this minimum has not been reached. The investigation on the amount of fall-out in the rain water collected under various geographical conditions on sites close to Christchurch is still in progress. Towards the end of the year activity in rain water increased considerably, and radiochemical analyses was made on the water collection in two successive months. The material identified indicated that the activity originated from fission products probably less than a year old. Samples of fish and other food material from Cook Islands have been tested for radioactivity, but no dangerous concentration of radioactive substances was detected.

During the year 90 shipments of radon produced at the Laboratory were made. These totalled 1,176 millicuries at the time of use. Most of the radon was used in the form of gold seeds, but there was still a small demand for radon needles and two special applicators were supplied. There has been a reasonable demand from the radiotherapists for the use of the four strontium superficial therapy applicators owned by the Laboratory, the period of applicator hire amounting to 248 days.

The Senior Physicist, Mr McCahon, attended the symposium on "The Peaceful Uses of Atomic Energy in Australia" held in Sydney in June. He visited the Australian Atomic Energy Commission's Research Establishment at Lucas Heights which may in future supply to New Zealand those radioisotopes which cannot be more economically obtained elsewhere, the Commonwealth X-ray and Radium Laboratory in Melbourne, and a number of other institutions concerned with radiation work.

Therapy Section

This section (staffed by two physicists) is associated, directly or indirectly, with the 54 radiation therapy plants and 20 associated clinical dosimeters in New Zealand. The section provides the whole physical service required by 33 of these units. In five hospital radiotherapy departments, biannual dosimetric calibrations are undertaken in cooperation with hospital physicists, together with additional plant calibrations, occasional basic measurements of new plant performance and the investigation of special techniques.

Four supervoltage therapy units are now operating in New Zealand hospitals, viz: a cobalt unit at Christchurch, a 4 MeV linear accelerator at Auckland, and the two added during 1958 – a 24 MeV betatron at Dunedin and a cobalt unit at Palmerston North. The remaining 50 X-ray therapy plants comprise 37 superficial units (six are operated in the grenz ray region and six are contact therapy units), and 13 conventional deep therapy plants in the 180–300 kV range.

Extending from the results of the Laboratory's primary standard dosimetry and its overseas linkage, the section ensures the stability of, and introduces current developments in, secondary standard dosimetry. This is applied either, via biannual intercomparisons of hospital dosimeters or, by directly checking treatment charts. In those hospitals and practices where the complete physical service is provided, this basic physical data is then applied to specific treatment plans, in cooperation with clinicians. Greater emphasis has been placed on intercomparisons among Laboratory and clinical instruments at supervoltage centres to ensure a uniform and integrated dosimetry.

Activities during the year included:

The calibration of new dosimeters at Auckland and Dunedin from conventional X-ray qualities to 4 MeV and 24 MeV respectively; the calibration of a multiple microchamber instrument over the same range at Auckland with wedge filter applications and for rotational therapy measurements; the calibration of a new dosimeter for therapeutic and protection applications with X-rays and cobalt radiation at Palmerston North; and the investigation of temperature and pressure factors and strontium standard checks on dosimeters.

The protective design of cobalt treatment rooms and adjacent radiotherapeutic suites in final, preliminary and exploratory stages was made for Palmerston North, Wellington, and Napier Hospitals respectively.

The Laboratory's new isodose plotter was used at five X-ray therapy centres. After preliminary tests and conventional X-ray Isodose derivations at Kew Hospital, Invercargill, selections of conventional fields, inclined fields, wedges and angled wedges, and grids were investigated

at Napier, New Plymouth, and Christchurch. A basic series of isodose curves on the cobalt unit at Palmerston North constituted part of this unit's initial calibration with which the section assisted the hospital physicist.

During the absence overseas of the Wellington and Palmerston North Hospital physicists, the section provided basic physical services and assisted radiographers with instructions on the maintenance of instruments and routine check techniques. The Senior Physicist assisted the Radiotherapy Department, Auckland Hospital, for two weeks at the request of their board.

A paper on "Recent Physical Advances in Dermatological X-Ray Therapy" was read at the New Zealand Dermatological Society Meeting at Timaru, October 1958, by Mr H. R. Atkinson. The issue of abstracts to this society from radiological journals on the physical aspects of superficial X-ray therapy was continued as part of the Section's information and advisory services.

Workshop Section (Electronics and Mechanical)

In addition to the normal routine maintenance of all the equipment and the instruments used in the Laboratory and in the field this section constructed new apparatus and modified existing units for use by physicists in their projects.

Two items deserve special mention as the standard of their design and construction would do credit to a larger and more elaborately equipped workshop than ours. The first is the remotely controlled isodose plotter, the use of which is given above in the report of the Therapy Section. The second is the development of a new precision voltmeter for use in the absolute standardisation of X-ray dose. Two of these instruments are now in service.

Staff

The total establishment at the end of the year in the various divisions was nine professional, seven technical and nine clerical.

H. J. YEABSLEY,
Acting Director, Dominion X-ray
and Radium Laboratory.

REPORT OF THE MEDICAL STATISTICIAN

The compilation of the statistics included in the *Annual Report on the Medical Statistics of New Zealand* constitutes the main function of the Medical Statistics Branch. The branch prepares special statistics for the various Divisions of the Department and for research workers in different fields both in New Zealand and overseas. A constant liaison is maintained with the World Health Organisation which is supplied with statistical material giving a picture of health trends in New Zealand. In addition from time to time special statistical investigations are made into important aspects of public health and diseases that warrant specific study. In this connection a very comprehensive statistical *Report on Cancer Morbidity and Mortality in New Zealand* was issued by the branch during 1958. The results of a field investigation of Maori infant mortality were also published and a study of the incidence of hydatids in New Zealand. Assistance has been given to medical officers of health in statistical projects undertaken in various districts including a detailed survey of respiratory disease in miners of the West Coast of the South Island.

Certain figures for 1958 in addition to those in the comment which follows may be found in different parts of this report, namely:

1. Live and still births, infant, neo-natal, and maternal deaths: Table 42 page 95.
2. Causes of maternal deaths: Table 43 page 96.
3. Deaths from tuberculosis: Table 53 page 106.
4. Child hygiene statistics: Table 34 page 83.

Principal Causes of Death

Certain causes of death and the rates per 1,000,000 of the population for Europeans and Maoris combined over a period of five years are shown in the following table. The causes of death have been classified in accordance with the International Classification of Diseases, Injuries, and Causes of Death (1955 revision), but for the purposes of these tables, have been grouped to show the causes of death that are mainly responsible for mortality in New Zealand in recent years. All figures are provisional and are subject to minor alteration.

Maoris have been included in all figures contained in this report as it is considered that a summarised statistical survey should cover the whole population of New Zealand. In cases where race characteristics are important, separate figures can be obtained from the detailed statistics contained in the *Annual Report on Medical Statistics*.

Table 67

Causes of Deaths	Number of Deaths					Rates per 1,000,000 of Mean Population				
	1958	1957	1956	1955	1954	1958	1957	1956	1955	1954
Tuberculosis (all forms) ..	202	254	238	293	304	88	113	109	137	145
Syphilis and its sequelae ..	22	33	23	31	29	10	15	11	14	14
Acute poliomyelitis ..	6	2	51	29	..	3	1	23	14	..
All other infective and parasitic diseases ..	138	133	140	153	141	60	59	64	72	67
Malignant neoplasms ..	3,315	3,213	3,153	3,171	2,966	1,450	1,439	1,444	1,483	1,416
Diabetes mellitus ..	305	286	229	216	199	133	128	105	101	95
Vascular lesions of the central nervous system ..	2,606	2,519	2,316	2,325	2,305	1,140	1,128	1,061	1,087	1,100
Rheumatic fever and chronic rheumatic heart disease ..	283	272	239	252	255	124	122	109	118	122
Other diseases of the heart and hypertension ..	6,677	6,815	6,636	6,447	6,355	2,921	3,053	3,041	3,014	3,033
Influenza ..	38	181	89	28	80	17	81	41	13	38
Pneumonia ..	710	950	803	628	584	311	426	368	294	279
Bronchitis ..	490	507	441	460	419	214	227	202	215	200
Ulcer of stomach and duodenum ..	171	207	179	176	167	75	93	82	82	80
Nephritis and nephrosis ..	161	160	131	178	220	70	72	60	83	105
Motor-vehicle accidents ..	387	407	334	364	332	169	182	153	170	158
Other accidents ..	704	731	610	653	816	308	327	279	305	390
All other causes ..	4,086	4,192	4,084	3,821	3,704	1,788	1,878	1,871	1,786	1,768
Totals ..	20,301	20,862	19,696	19,225	18,876	8,881	9,344	9,023	8,988	9,010

Deaths from tuberculosis recorded an all time low figure during 1958. The decrease in numbers amounted to 52 or a fall of 20 per cent from 1957. The death rate per 1,000,000 of population decreased by 22 per cent. There was little movement recorded for other infectious diseases although poliomyelitis showed an increase in 1958. It is of interest to note that none of the deaths occurred in the vaccinated age groups, 5-15. Deaths from malignant neoplasms reached the highest total in the history of the country although the death rate was exceeded in 1955. Cancer is a disease of older life and some of the increase recorded in recent years must be due to the fact that a greater proportion of New Zealand's population has been entering the cancer age groups. The effects of the low birth rates of 30 to 40 years ago are just beginning to be felt in these ages and it would be reasonable to expect some decline in the total numbers of deaths from cancer in the early future. The diseases of old age generally continue to show an increase in both numbers and death rates, with the exception of "other diseases of the heart and hypertension". The absence of an epidemic of influenza during 1958 after the outbreak of the Asian variety in 1957 is reflected in the rapid drop in the death rate from both this disease and pneumonia. It is frequently observed that the pneumonia death rate follows the movement of the influenza death rate. After a record high death rate from motor-vehicle accidents in 1957, the substantial drop of 20 in the number of such deaths in 1958 is very welcome. Other accidental deaths also declined in number, 704 in 1958, as compared with 731 in 1957. The total number of deaths from all causes during 1958 was 20,301. This figure corresponds to a death rate of 8.88 per 1,000 of mean population and is the lowest figure recorded for some years.

Infant Mortality

There was a decline in the infant mortality rate for 1958 as compared with 1957, the figure of 23.35 being the second lowest on record.

Table 68—Still Births and Infant Mortality Rates (European and Maori), 1954–58

Period	European					Maori				
	Deaths per 1,000 Live Births			Rates per 1,000 Total Births		Deaths per 1,000 Live Births			Rates per 1,000 Total Births	
	Under 1 Month	1 and Under 12 Months	Total, Under 1 Year	Still Births	Still Births and Neo-natal Deaths	Under 1 Month	1 and Under 12 Months	Total Under 1 Year	Still Births	Still Births and Neo-natal Deaths
1958 ..	13.61	5.78	19.40	15.00	28.41	22.01	32.36	54.37	16.20	37.85
1957 ..	13.89	6.09	19.98	15.83	29.50	20.81	37.09	57.90	15.15	35.64
1956 ..	13.34	6.05	19.39	16.73	29.85	19.96	34.40	54.36	19.72	39.29
1955 ..	14.14	5.95	20.09	15.71	29.62	19.63	42.88	62.51	16.10	35.41
1954 ..	14.33	5.66	19.99	17.69	32.02	20.00	38.60	58.60	19.10	38.72

The neo-natal death rate (under one month) showed a decrease for Europeans, but the Maori rate increased appreciably. This was compensated for by a substantial decrease in the Maori rate for 1 and under 12 months, resulting in a decrease for the total Maori infant mortality rate. The principal causes of infant mortality (Europeans and Maoris combined) are shown in the next table.

Table 69—Deaths of Infants Under One Year by Causes (European and Maori Combined) 1954–58

Principal Cause of Death	Number of Deaths					Rates Per 1,000 Live Births				
	1958	1957	1956	1955	1954	1958	1957	1956	1955	1954
Influenza, pneumonia, and bronchitis	221	277	235	220	210	3.6	4.7	4.2	4.0	3.9
Gastro-enteritis, diarrhoea, and dysentery	53	54	44	67	55	0.9	0.9	0.8	1.2	1.0
Congenital malformation	255	197	210	214	231	4.2	3.4	3.7	3.8	4.3
Birth injury	155	169	172	175	129	2.6	2.9	3.0	3.1	2.4
Asphyxia and atelectasis	165	195	145	154	132	2.7	3.3	2.6	2.8	2.4
Haemolytic disease of newborn	48	28	39	40	45	0.8	0.5	0.7	0.7	0.8
Immaturity	191	208	183	202	242	3.1	3.6	3.2	3.6	4.5
Other	328	292	285	293	258	5.4	5.0	5.1	5.3	4.8
Totals	1,416	1,420	1,313	1,365	1,302	23.3	24.3	23.2	24.5	24.1

Apart from the drop in influenza deaths among infants, the most striking features of the infant mortality picture for 1958 are a substantial increase in deaths from congenital malformations and haemolytic disease of the newborn, and compensatory decreases in the numbers of deaths from birth injury, asphyxia, and atelectasis, and immaturity (unqualified). Immaturity is still a high cause of infant loss, and although there was a fall in 1958 in the number of deaths assigned to this cause alone, when all deaths in which immaturity was specified as a contributing factor (as shown in the next table) are taken into account, there was an increase of 13 in 1958 as compared with 1957.

Table 70—*Death of Infants Under One Year*

A = Under one month.

B = One month and under one year.

(Figures in parentheses denote those where prematurity was mentioned associated with death).

		European				Maori			
		1958	1957	1956	1955	1958	1957	1956	1955
Influenza, pneumonia, A		29 (8)	30 (5)	36 (10)	21 (9)	12 (3)	16 (7)	6	3 (3)
and bronchitis	B	85 (1)	103	82	79 (2)	95 (1)	128	111	117
Gastro-enteritis, diar-	A	3	3	1	3	4 (1)	1	2	1
rhoea, and dysentery	B	8	10	15	11	38 (1)	40	26	54 (1)
Congenital malformation	A	133 (14)	96 (17)	95 (13)	111 (17)	12	11	15 (2)	7 (1)
	B	90 (1)	73 (3)	89	85 (2)	20	17	11	11
Birth injury ..	A	121 (65)	133 (58)	141 (67)	142 (61)	32 (11)	30 (13)	28 (14)	30 (18)
	B	2	5	2	2	..	1	1 (1)	1
Asphyxia and atelectasis	A	132 (85)	162 (101)	126 (75)	136 (80)	29 (18)	31 (9)	17 (8)	16 (8)
	B	4 (1)	2 (1)	2	1	..	..	..	1
Haemolytic disease of	A	48 (13)	24 (2)	37 (11)	39 (18)	..	2	..	..
newborn	B	..	1	2	1	..	1	..	..
Immaturity ..	A	149	178	143	162	41	28	40	40
	B	..	1	..	..	1	1	..	..
Other ..	A	117 (55)	94 (36)	94 (29)	91 (29)	21 (10)	19 (9)	16 (4)	17 (3)
	B	122 (3)	121	113	118 (1)	68	58	62	65
Totals	A	732	720	673	705	151	138	124	114
	B	311	316	305	297	222	246	211	249

CEDRIC E. GARDINER,
Medical Statistician.

REPORT OF THE CHEMICAL INSPECTOR

GENERAL

The Health Act 1956 introduced legislation to enable sources of air pollution to be inspected and controlled in order that the concentration of harmful matter present in the atmosphere should be minimal, consistent with industrial activity. This report is the first in which observations are made on the progress made by industry in its efforts to limit the discharge of pollutants. The general attitude of industrial managements concerned with air pollution and its abatement has been found most cooperative.

One major difficulty in the fertiliser industry is that sulphuric acid production fluctuates throughout the year because stock holding capacities of both acid and finished fertiliser are insufficient. It is suggested that increased storage facilities would enable a more even level of production to be budgeted for and therefore eliminate the periods of high intensity operation which are the main cause of escapes being higher than the 2.0 grain limit.

THE AUCKLAND PROBLEM

The meteorological conditions during the "fumes season" of January-March 1958 were such that the attacks occurred on a much reduced scale. Better retention within factory premises of organic matter from the wastes discharged by various animal handling establishments resulted in a significant decrease in the solid matter discharged to the mud flats.

The main problem remains primarily one of sewage disposal, and completion of the main sewer late in 1960 will initiate the elimination of the major source of the "fumes nuisance". The deposit of decaying organic matter which has been built up over 30-40 years will continue to give off gases for some time after the addition of fresh sewage has ceased, but on a much reduced and diminishing scale.

It is suggested that methods of hastening the decomposition, dispersal or neutralisation of this residual organic deposit should be actively investigated.

In a growing industrial area, however, there are many sources of air pollution and only when all these, such as blood, bone, and offal processing, chemical works, smoky chimneys and burning rubbish tips are effectively controlled together with adequate pollution measuring stations will the situation be considered acceptable.

WORKS REGISTRATIONS

The present register is made up as follows, but as there are certain premises yet to be registered, a slight increase during 1959 may be expected.

Table 71

Type of Works				North Island	South Island	Total
Bisulphite	..	..	..	..	4	4
Cement	..	..	..	5	5	10
Chlorine	..	..	..	1	1	2
Fertiliser	..	..	..	7	4	11
Gas liquor	..	..	..	..	1	1
Lead ..	..	..	..	4	1	5
Lime ..	..	..	..	20	24	44
Petroleum	..	..	..	3	..	3
Pulp and paper	..	..	..	2	..	2
Sulphide	..	..	..	..	3	3
Sulphuric acid	..	..	..	7	4	11
Tar ..	..	..	..	7	9	16
				<hr/> 56	<hr/> 56	<hr/> 112

REGISTERED WORKS

Bisulphite Works

Sulphurous acid is prepared on a relatively small scale for use in the tanning and glue industries. Certain items of absorption plant have been noted as in need of replacement.

Cement Works

Large scale modifications to both process and capacity together with new production facilities are features of the horizontal kiln plants. Dust control in some clinker grinding and finished product handling plants could be improved.

The vertical kiln method of production continues to be a source of considerable dust nuisance. In spite of the theoretically lower dust burden in the gases from this type of kiln, the concentration is much higher than expected and equipment is being installed to reduce the dust discharge. Handling methods of raw materials, clinker and product have been commented on and these have been improved, although there is still room for improvement.

Chlorine Works

These are two works registered under this heading and their operations concerning the use of this chemical required no special comment.

Fertiliser Works

All fertiliser works are now equipped with washing plants for the treatment of their "den" gases and apart from one exception all are known to function satisfactorily.

Some discharge of dust from conveying, handling, and loading facilities have been noted and more attention will be given to the control of these sources. In general the standard of dust control and good house-keeping leaves a lot to be desired particularly in the older plants where it is common practice to allow a deposit 3–4 in. deep to accumulate on throughways, loading banks, etc. Apart from the economics of such procedures, windy conditions distribute such deposits throughout the factory and surrounding areas.

Gas Liquor Works

Ammonia is recovered at one gasworks to provide a saleable product, and although this works operates in conjunction with one or two other gasworks, considerable quantities of useful chemicals from similar undertakings are not recovered. A useful contribution would be made if group schemes for economic recovery could be operated.

Lead Works

The maximum lead content of gases discharged from lead works is specified as 0.1 grain/cu. ft. from works in which the volume of gases discharged (before dilution) is less than 3,000 c.f.m. and by the use of the "dry" method of fume collection (cyclones and filter bags) this requirement is readily attained. One works has recently completed the installation of this system and its lead discharge is well within the prescribed limit.

Other establishments are still using either the settling chamber system or forms of water washing equipment, neither of which have to date been found particularly efficient as lead fume arrestors, and suitable modifications will be necessary.

In addition to the lead emission the recovery process also discharges sulphur dioxide, sulphur trioxide, and various organic degradation products from the combustion of battery casings and separators and these gases are receiving attention.

Lime Works

Lime works are a potential source of dust but fortunately the majority are situated in such remote areas that the particles discharged have little or no air pollution significance.

Some processes, however, principally those employing a heating cycle, discharge gases having a relatively high dust burden and it may be necessary to install devices such as cyclones to reduce the dust discharge.

Petroleum Works

The works registered under this heading have yet to be visited, since preliminary information did not justify immediate attention. It is expected that all heating processes will be investigated in order to minimise the discharge of volatile organic compounds particularly those containing sulphur.

Pulp and Paper Works

As with petroleum works, time has not permitted these establishments to receive a great deal of attention, and perhaps their location helps to reduce the health hazard or nuisance value of their gaseous discharges. From visits made however, it has been noted that increased capacities and new facilities may require additional air pollution control equipment.

Sulphide Works

These works are known to discharge noxious gases and although some condensation equipment exists, it is put to little if any use. The sulphides discharged (mainly from rubber reclamation processes) are not easily dealt with, but there are several systems which can be employed to provide a much more inoffensive escape than at present.

Sulphuric Acid (Chamber Plants)

The sampling of exit gases from sulphuric acid works began towards the end of August 1958, and the relatively small number of tests (15) taken to the end of 1958 show an average escape of 3.3 grains SO_3 /cu. ft. Two escapes of 9.0 and 8.2 were observed and omitting these, the average of the remaining 13 tests drop to 2.5 which is considered to reflect the level more accurately.

Of the 15 tests, nine required letters to the managements concerned pointing out that the discharges exceeded the prescribed limit, and in all cases real efforts have been made to reduce the acidity of the gases discharged.

In some works, the modifications necessary to enable production to continue within the limits of the regulations are already being carried out while at others the plans are well forward but have yet to be implemented.

While the position generally is acknowledged to be a considerable improvement on the pre-regulation era, it is emphasised that the limit is 2.0 grains, and all efforts by the Department of Health are directed at achieving this from all chamber plants.

The general state of repair of some installations calls for comment since gross leaks have been observed on occasions and brought to the management's notice. Escapes from any source are a real loss of raw materials and more attention to the chemical yield can only produce lower operating costs.

Sulphuric Acid (Contact Plants)

All contact plants are operating within the limits laid down in the regulations, and no excessive discharges of acid mist have been noted. The recent commissioning of three new installations will materially help to reduce the strain under which a number of older chamber plants have laboured.

Tar Works

Production of tar is in general an intermittent process depending largely on the local roading programme. The scale of distillation operations is small and apart from the suggestion that the final gases from the creosote condensation equipment should be fed back to the combustion chamber associated with the plant, no comments are made.

Unregistered Works

A number of visits have been made to meat works, tile works, power stations, plant quarantine stations and works carrying out such operations as grinding, crushing, etc., where various nuisances have been the subject of complaint. Technical help and advice has been given to interested parties and this aspect of departmental effort will undoubtedly assist in the reduction of air pollution from numerous sources too small to be covered by the Schedules and Regulations.

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